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No. XV. OF VOL. II., 1931. LONDON, SATURDAY, OCTOBER 10, 1931. Pp.120 —Price 1s.

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ADDRESSES AND ORIGINAL ARTICLES

INNERVATION OF BLOOD-VESSELS OF THE LIMBS.*

BY JOHN S. B. STOPFORD, M.B.E., M.D. MANCH., F.R.S.,
PROFESSOR OF ANATOMY IN THE UNIVERSITY OF MANCHESTER.

IT has become well known since the publication of the researches of Kramer and Todd,[1] and Potts [2] that the blood-vessels of the limbs receive their innervation from two sources. First, a proximal supply, which comes from the lower part of the cervical portion of the sympathetic ganglionated cord, and accompanies the subclavian artery in the case of the arm; and an extension of the aortic sympathetic plexus along the common iliac, external iliac, and femoral arteries in the leg. Secondly, a more distal supply, consisting of fine filaments which arise from neighbouring peripheral nerves, and reach the vessels at intervals. Both sets of fibres take part in the formation of the periarterial plexuses, which do not contain any nerve-cells. It is only recently that we have obtained information regarding the extent of the distribution of the fibres from these two sources, and also of the types of fibres which reach the blood-vessels in these two ways. Both points are of physiological and pathological importance, and have a significant bearing upon operations which have been devised during the last few years on different parts of the sympathetic nervous system.

The investigations prosecuted by Woollard [3] and Blair, Duff, and Bingham,[4] have supplemented particularly our knowledge. The latter, by the study of the perivascular plexuses in an amputated leg, upon which the operation of perivascular sympathectomy had been performed about one month previously, have suggested that the overlap of fibres from the two sources is considerable upon the main arteries. Although all the nerves accompanying the femoral artery in Hunter's canal had been destroyed by the operation of sympathectomy, many fibres arrived distally from neighbouring peripheral nerves, and it was noted that these were chiefly finely medullated filaments with a few large medullated fibres and an appreciable number of non-medullated ones. Amongst these normal fibres, as low as the distal part of the posterior tibial artery, were found degenerate fibres, presumed to be chiefly from the aortic plexus, which had been divided by the operation of perivascular sympathectomy. Woollard, by studying the effects of excision of the lumbar sympathetic cord in one series of cats, and of periarterial sympathectomy in another series, found that in these animals the overlap between fibres from the two sources of supply was less extensive, and that the transition occurred in the region of the bifurcation of the common femoral artery. He was also of the opinion that the proximal supply was practically entirely composed of non-medullated fibres, whilst the filaments from peripheral nerves were chiefly medullated. From the more extensive observations of Woollard it appears likely that some of the degenerate fibres seen by Blair and his co-workers represent filaments which had reached the femoral artery from peripheral nerves above the level of the operation, and that the apparent extent of the proximal source of supply was too extensive and the overlap too great. This interpretation is supported by the statement, which conflicts with the conclusions of Woollard, that the fibres accompanying the upper part of the femoral artery "were certainly not wholly or in a great part non-medullated." Woollard reports a number of other important observations which may be summarised as follows:—

1. No nerve-cells were found in the perivascular plexuses, which is in accord with most recent observations. The "degeneration experiments disclosed a complete disappearance of the intramuscular nerve net right up to the capillary bed." These observations absolutely deny the existence of any local neural mechanism, which is maintained by peripherally placed ganglion cells.
2. On tracing the medullated fibres along the vessels he discovered branches which ended in the neighbouring fat and connective tissue, and sent collaterals to the adventitia of the blood-vessels. It is important to bear in mind that these fibres had their cell station in the posterior root ganglia, and that they demonstrate a neural mechanism for the axon reflexes described by Lewis, and are probably capable of conducting antidromic impulses.
3. Like a number of other workers, Woollard found that many, but not all, the capillaries were accompanied by fine non-medullated sympathetic fibres. He was unable to demonstrate that any of these fibres were related to the Rouget cells, and he did not see any fibres terminating in the capillary wall.
4. From a careful study of the fine intramuscular plexus (or net) in the tunica media of arteries and veins, he failed to find any terminals in the muscle-fibres: the fine non-medullated filaments invariably ended in a pericellular position.

Two Sets of Fibres.

Although some points require confirmation and amplification, it is clear that structurally we have two distinct sets of fibres in relation with blood-vessels of the limbs.

The *non-medullated fibres*, which are sympathetic in origin and vasostrictor in function. They reach the vessels by both sources of supply, and can be traced to arteries, veins, and capillaries. In the case of the arteries and veins they appear to end around the muscle-cells of the media, but their relation to the capillary wall is not absolutely clearly defined. It is not within the scope of this paper to describe the prespinal paths connected with the vasoconstrictor fibres, nor the higher vasomotor centres, but it is necessary to mention that, in addition to the well-known lower centres, knowledge is accumulating which indicates the presence of a principal vasomotor centre in the region of the tuber cinereum.

The *medullated fibres*, which reach the blood-vessels only through the peripheral nerves, have their cell station in the posterior root ganglia, and are chiefly distributed to vessels in the more distal parts of the limbs. It seems clear that many of these are concerned with vasodilatation, and are of interest in connexion with antidromic impulses and axon reflexes. Lewis and Marvin [5] have shown that the antidromic impulses travelling down such fibres release a vasodilator substance from the tissues. They are also of opinion that the cutaneous manifestations of herpes zoster are due to antidromic impulses which release a histamine-like substance in the skin. Lewis, Harris, and Grant [6] have proved that the "flare" in the triple reaction succeeding the injection of histamine or injury to the skin is dependent upon the integrity of the cutaneous nerves of the region, and is caused by a local axon reflex. There is ample proof that this axon reflex is transmitted by medullated and not sympathetic fibres, and there seems to be little doubt that the medullated fibres with collaterals to blood-vessels, described by Woollard,

* Abstract of a presidential address to the Manchester Medical Society on Oct. 7th.

provide the anatomical path for this axon reflex. It seems to have been forgotten, however, that some of the medullated fibres—particularly the large ones—are possibly related to sensation of the deeper tissues, and merely run proximally *with* the blood-vessels. It has long been known [7] that some fibres concerned with deep sensibility accompany tendons, and only join the main nerve trunks in the more proximal part of the limb. Duthie [8] and the writer [9] have submitted evidence to show that some of these fibres from subcutaneous end-organs also *accompany* blood-vessels. Reference will be made to these later in connexion with the subject of sensitivity of blood-vessels, but in the meantime it is important to stress the fact that some of the medullated fibres seen histologically to accompany arteries and veins may be concerned with sensation, and not with the innervation of the vessels to which they are intimately related.

Innervation of Capillaries.

In 1923 Dale [10] gave an account of the observations and experiments which have made it impossible to regard the capillaries merely as passive tubules which open or close in response to changes in pressure within or without their lumen. He accepted the independent contractility of the capillaries as proven. Although there is formidable experimental evidence in support of the view that the capillaries are under nervous control and responsive to chemical stimuli, the question of the regulation of the size of the capillaries is still a debatable point. Reference here will only be made to innervation and nervous control. A number of observers have demonstrated unmyelinated fibres accompanying the capillaries, many winding round them in a spiral manner, but few have been able to discover any nerve-endings on the capillary wall. Nevertheless, histological evidence indicates that the capillaries probably have a nerve-supply. The experimental support for the conclusion that the capillaries are under nervous control is much stronger, and has been so fully reviewed and discussed recently by Dale,[10] Lewis,[11] and Hinsey [12] that it is unnecessary to repeat it. As Lewis states, the clearest evidence in favour of a vasoconstrictor supply to mammalian capillaries is furnished by the investigations of Harris and Marvin,[13] who demonstrated a response of these vessels to stimulation of the sympathetic with a stand-still circulation induced by constriction of adjoining arterioles. This work confirmed similar observations which had been made by others upon animals below the mammalian level. Since the histological evidence for a *direct* nerve-supply lacks absolute conviction, the suggestion made by Krogh [14] and his co-workers that the Rouget cells are innervated by the sympathetic, and responsible for capillary contraction, appears at first attractive. The somewhat irregular disposition of these cells with regard to the capillaries and their origin from connective tissue-cells [15] is distinctly unfavourable to such a conclusion, and the more recent researches of Clark and Clark [16] upon amphibian larvæ render it impossible to regard the Rouget cells as the active agents in contraction of capillaries. These workers have found that both active and passive contraction of the capillaries can occur independently of the presence of the Rouget cells, and have noted that when these cells were present the capillary wall can be seen to draw away from the cell at the time of contraction, leaving a definite space between the capillary wall and the Rouget cell. Clark and Clark conclude from their observations that, in amphibian larvæ, the capillary endothelium is able to contract quite independently of any form of adventitial cell. Histological investigation has not confirmed any sympathetic supply to Rouget cells, which, as Woollard [17] has stated, bear a "variable relation to nerve-fibres."

The idea of the capillary endothelium being able to contract is a trifle disconcerting and rather difficult to accept, but reference to the development of the vascular system offers some illumination, and considerable light has been shed upon this subject in a paper by Woollard.[17]

Space will not permit a discussion of the chemical factors in capillary control, which have been reviewed by Dale [18] in his Croonian lectures in 1929. It is sufficient to quote one sentence from his first lecture: "From several different directions, therefore, evidence is accumulating of chemical factors in the control of the circulation reinforcing and supplementing the long recognised mechanisms of nervous control, and even intervening in the production of their effects."

Sensitivity of Blood-vessels.

There is no anatomical evidence of any afferent path from the blood-vessels of the limbs to the ganglionated sympathetic cord. Certain clinical observations have, however, been recorded which on superficial examination suggest that such a pathway exists, but on more critical analysis the evidence for such a contention seems very unconvincing and unacceptable. In the first place, Foerster and others have found that ligation of certain large arteries, like the brachial and popliteal, induces pain, but this observation cannot be accepted as proof of sensitiveness of blood-vessels unless it is established beyond doubt that sensory somatic fibres, which are known to accompany blood-vessels, are not stimulated or included in the ligature. The same fallacy emerges regarding the observation that pain may be induced by compressing certain arteries through the skin against bone, such as the radial in the region of the wrist.

Secondly, it has been alleged that the occurrence of certain vascular diseases associated with pain and characterised by angiospasm, in the absence of any clinical evidence of implication of somatic nerves, indicates a sensory path from blood-vessels. It is noteworthy that when the vessels are dilated by drugs or other means the pain is relieved. This suggests that the pain may just as likely be due to ischæmia, which causes the accumulation in the tissue spaces of some irritant substance which is flushed out by vascular dilatation, as by the stimulation of sensory endings in the vessel wall by spasm. My mind was directed to this explanation shortly before reading the conclusive experiments described by Lewis in the St. Cyres lecture,[19] by observations upon a patient suffering from embolism of the external iliac artery. The patient complained of pain in the foot and calf of the leg, and the latter was distinctly tender to pressure. No pain or discomfort was felt or had ever been experienced above the knee or anywhere near the site of the arterial obstruction. Further reference will be made to this explanation and the work of Lewis later.

Thirdly, a number of writers have recorded examples of residual sensation persisting after division of a series of somatic posterior roots, which in their view infers a sensory path from blood-vessels through the sympathetic nervous system. I was at one time misled by this evidence, but a fuller investigation of the question of overlap and transmission of somatic sensory fibres along blood-vessels showed that these observations were untenable as definite evidence of a sympathetic path for sensation. Recently, Davis and Pollock [20] have reviewed the evidence, and submitted

experimental results which strongly support the view that there is no sensory sympathetic course from blood-vessels.

Fourthly, and perhaps the most tempting observation is the immediate relief of pain after excision of the sympathetic in such conditions as thrombo-angeiitis obliterans. It would at first appear that the relief was the direct result of section of pain paths which must run in the sympathetic, since the operation is confined to this division of the nervous system. No such paths are known to exist anatomically, and further reflection shows that the vasodilatation consequent upon the sympathectomy is more likely to be the explanation of the relief of pain, by permitting irritant substances which had accumulated in the tissues to be flushed out. The experiments described by Lewis, in which observations were taken regarding the production of pain by exercise after the application of a ligature to a limb, and its relief by re-establishment of the circulation, seem to prove conclusively that severe reduction of the supply of blood to the muscles causes a collection in the tissue spaces of some factor which is responsible for the pain. By improving the circulation, which inevitably follows division of vasoconstrictor fibres, provided the vessels are sufficiently pervious, the factor responsible for the pain is removed from the tissue spaces.

In view of the criticism which may be levelled at the interpretation of the clinical observations which have been submitted in favour of the belief that a sympathetic sensory path from blood-vessels exists, it is difficult to agree with the statement of Kinnier Wilson [21] that here we have another example in which "clinical research has preceded that of anatomy and physiology."

Although there does not appear to be any anatomical or sound clinical evidence for the existence of a *sympathetic* sensory path from blood-vessels, there are grounds for believing that certain arteries may be sensitive, but that the path must be through the spinal nerves. Several observers have suggested that the injection of certain substances into arteries in animals induces pain, but the experiments do not always confidently justify this conclusion. Recently Burget and Livingston [22] have injected a 5 per cent. solution of lactic acid into the brachial artery in dogs, and claim that this gave rise to afferent impulses which appeared to be painful. They found that excision of the stellate and second thoracic sympathetic ganglia did not alter the response, and conclude that the impulses enter the central nervous system largely by the seventh and eighth cervical and first dorsal posterior spinal roots. Provided we disregard the difficulties of judging whether an animal feels pain as a direct result of a specific stimulus, these experiments would undoubtedly indicate that the brachial artery in the dog is sensitive, and that the conduction of the impulses from the vessel is through certain spinal nerves. Other observers have denied the causation of pain by the injection of foreign substances unless the perivascular tissues are damaged, which Burget and Livingston claim to have avoided. Consequently at the present time it must be concluded that the experimental observations are conflicting, and from the obvious difficulty of interpreting the results in animals this method of approach to the problem is liable to be unconvincing.

In a personal communication Prof. David Waterston informs me that the insertion of a needle into the brachial artery in the human subject induces intense pain. He is of opinion that the intima is sensitive, and that the pain is not due to contraction of the artery. I have not repeated these human experiments in the case of arteries, but have discovered no sensory response succeeding the insertion of a needle into superficial veins or upon stimulation of the venous endothelium. These experiments of Prof. Waterston are to be published later, and I wish to thank him for his generous action in allowing me to refer to them in advance. The observations he has made appear to constitute the strongest evidence so far advanced that arteries are sensitive. There is little doubt that, if his conclusions are confirmed, the path from the sensitive vessels must run through the cerebro-spinal and not the sympathetic system.

Arterial Occlusion associated with Neurological Changes.

This subject has interested a very large number of investigators, and there is an extensive literature dealing with the interrelation of vascular and nervous changes. Many have believed that thickening of the arterial wall succeeds paralysis of the vasomotor fibres, and yet, after following over many years a number of cases suffering from irreparable division of one or more peripheral nerves, frequent examinations of the patients failed to reveal any tendency to arterial occlusion in consequence of paralysis of vasoconstrictor fibres. From prolonged observations and recent experiences in association with my colleague, Prof. E. D. Telford, I am convinced that long-continued *irritation* of the vasoconstrictor fibres is the primary cause of the changes in the arterial wall. In 1918 [23] I recorded clinical and histological evidence to show that "irritative nerve lesions can produce changes in the walls of the arteries supplied by the affected nerves," and since that time have had opportunities of confirming the conclusion that irritative lesions of peripheral nerves can induce obliterative changes in arteries. Two features appear to be necessary for the occurrence of the vascular complications: first, the irritation must involve the vasoconstrictor fibres in the nerve, and, secondly, the irritation must be of considerable duration. Recently, Telford and I have demonstrated [24] that the vascular complications of cervical rib are due to irritation of the vasoconstrictor fibres in the lowest trunk of the brachial plexus, and we have submitted a suggestion as to how prolonged vasoconstriction can induce arterial occlusion. Still more recently we have recorded [25] a case of arterial thrombosis associated with irritation of the lumbar sympathetic cord, caused by histological changes which are typical of neurofibromatosis. We have had a very similar case since the publication of that paper. Thus we have evidence of obliterative arterial changes following prolonged irritation of vasoconstrictor fibres in peripheral nerves, the lowest trunk of the brachial plexus and the lumbar sympathetic cord, and it seems impossible to escape the conclusion that the arterial changes are caused by the irritation.

From a study of excised arteries in a number of these cases it is possible to follow the progress of the arterial changes. Briefly the sequence of events appears to be:—

1. Prolonged spasm in consequence of irritation of the vasoconstrictor fibres.
2. Thickening of the intima, generally in patches, and often associated with fibrillation and breaking-up of the internal elastic lamina.
3. About the same time, degeneration of the muscle of the tunica media is manifest, and is succeeded by fibrosis of this coat of the arterial wall.
4. Disintegration in places of the endothelial lining.
5. Thrombosis.
6. Slow organisation of the thrombus, often leaving minute channels.

Telford and I have put forward the suggestion

that the angiospasm, caused by the irritation of vasoconstrictor fibres, must inevitably induce constriction or even obliteration of the vaso-vasorum. We believe that prolonged narrowing or occlusion of the vaso-vasorum is likely to cause nutritional changes in walls of the arteries, and to lead ultimately to thrombosis. Whether this is the correct explanation of the process or not, the fact remains that sustained irritation of vasoconstrictor fibres is liable to cause profound changes in the arterial wall, and two practical points emerge from this conclusion. First, irritation of vasoconstrictor fibres should be relieved at an early date to prevent the supervention of arterial complications and their sequelæ; and, secondly, every opportunity should be taken of searching histologically for evidence of pathological processes affecting vasomotor fibres in all cases of obscure vascular disease. Sympathectomy is now being widely practised to relieve a number of diseases in which angiospasm is a prominent symptom, and, in the light of our own investigations, Telford and I have urged that a very complete histological examination should be made of all excised material. We venture to think that such investigations are likely to shed considerable light upon the ætiology of several pathological conditions of blood-vessels which require explanation.

REFERENCES.

1. Kramer, J. G., and Todd, T. W.: Anat. Record, 1914, viii., 243.
2. Potts, L. W.: Anat. Anz., 1914–15, xlvii., 138.
3. Woollard, H. H.: Heart, 1926, xiii., 319.
4. Blair, D. M., Duff, D., and Bingham, J. A.: Brit. Jour. Surg., 1930, xviii., 215.
5. Lewis, T., and Marvin, H. M.: Heart, 1927, xiv., 27.
6. Lewis, Harris, K. E., and Grant, R. T.: Ibid., 1927, xiv., 1.
7. Head, H., Rivers, W. H., and Sherren, J.: Brain, 1905, xxviii., 99.
8. Duthie, O. M.: Ibid., 1926, xlix., 187.
9. Stopford, J. S. B.: Sensation and the Sensory Pathway, London, 1930.
10. Dale, H. H.: Brit. Med. Jour., 1923, i., 959.
11. Lewis: The Blood-vessels of the Human Skin and their Response, London, 1927.
12. Hinsey, J. C.: Jour. of Comp. Neurol, 1928–29, xlvii., 23.
13. Harris, K. E., and Marvin, H. M.: Heart, 1927, xiv., 135.
14. Krogh, A.: The Anatomy and Physiology of the Capillaries, New Haven, U.S.A., 1922.
15. Clark, E. R., and Clark, E. L.: Amer. Jour. of Anat., 1925, xxxv., 239.
16. Same authors: Ibid., 1925, xxxv., 265.
17. Woollard: Med. Jour. of Australia, 1928, ii., 134.
18. Dale: THE LANCET, 1929, i., 1179, 1233, and 1285.
19. Lewis: See THE LANCET, 1931, i., 1138 and 1322.
20. Davis, L., and Pollock, L. J.: Trans. of the Amer. Neurol. Assoc., 1930, p. 494.
21. Wilson, S. A. K.: Brain, 1927, l., 428.
22. Burget, G. E., and Livingston, W. K.: Amer. Jour. of Physiol, 1931, xcvii, 249.
23. Stopford: THE LANCET, 1918, i., 465.
24. Telford, E. D., and Stopford: Brit. Jour. of Surg., 1931, xviii., 557.
25. Same authors: THE LANCET, July 4th, p. 16.

BOGNOR REGIS HOSPITAL.—On Sept. 25th, Lord Leconfield, Lord-Lieutenant of Sussex, laid two foundation-stones of a new hospital on the Chichester road. The original hospital was really a cottage war memorial hospital, but it had long been felt that the institution was an inadequate memorial, and the governors decided to erect a new hospital, partly to commemorate the restoration to health of the King, who spent some months at Bognor during his illness in the winter of 1928–29. One of the new wards will be a memorial to the late Dr. S. A. Lane.

A NOVEL HOSPITAL SATURDAY SCHEME.—Some eight or nine months ago Messrs. J. Lyons and Co. initiated on behalf of the Birmingham Hospital Saturday Fund a scheme by which packets of their teas sold within a period of six months in the Birmingham district contained vouchers representing 1*d.* in the pound weight. These vouchers, if returned by the purchasers to the firm, represented in the aggregate the contribution which Messrs. Lyons and Co. undertook to pay over to the Fund. The scheme has been so successful that the firm last week paid over a cheque for £5000. The money is to be applied towards the building of the Fund's new convalescent home at Weston-super-Mare.

BLUE SCLEROTICS AND ASSOCIATED DEFECTS.

A STUDY OF FOUR FAMILIES WITH NOTES ON THEIR MINERAL METABOLISM.

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THE purpose of this communication is to put on record a series of observations on the incidence of blue sclerotics and certain associated abnormalities in four families which have recently come under our notice. The metabolism of calcium, magnesium, phosphorus, and fat have also been studied in certain members of these families.

It is not our intention to review in full the previous non-chemical work on these associated defects. This immense field has already been covered by Bell.[1] The earliest record of a marked case of hereditary idiopathic generalised bone fragility appeared in 1788 in a dissertation published in Upsala by Ekmann.[2] This case was traced through three or probably four generations. As regards blue sclerotics, Bell has been unable to find any reference earlier than the casual statements of Henzschel[3] in 1831. In 1848 the two conditions were associated for the first time as a clinical entity by Lobstein[4] and by Cornaz.[5] Bell in the course of her investigation attempted to find if there was any definite association between any two or more of the following conditions—bone

FIG. 1.

CASE 3, 17, Family A.—Radiogram of skull showing curious shape of occipital region and well-marked osteoporosis.

fragility, blue sclerotics, liability to dislocations and sprains, and otosclerosis. Her statistical survey showed that pedigrees of bone fragility cannot be assumed to contain material homogeneous with that obtained from pedigrees showing a liability to fracture associated with blue sclerotics. The sex-incidence in these two groups was markedly different. The

male sex incidence of bone fragility alone was found to be high while that of blue sclerotics associated with the liability to fracture was relatively low. Bell also found that in pedigrees illustrating the associated defects of blue sclerotics, liability to fracture, and otosclerosis, the presence of the blue sclerotic appeared to determine the addition of any one or more of these other defects which latter never appeared to occur in hereditary form in these pedigrees without the associated blue sclerotic. The female appeared the more potent transmitter. Among adults with blue sclerotics approximately 60 per cent. had associated otosclerosis, and 44 per cent. suffered from all three defects. The question of the association of dislocations and sprains with blue sclerotics she does not answer, most probably from a lack of sufficient material.

Despite the large volume of clinical data which has grown round the subject, the cause of this disease or inborn defect has not been determined. Most observers are agreed that the peculiar blueness of the sclerotics is due to an increased translucency of this membrane, and not to an actual increase in colour or decrease in thickness. Shugrue, Rockwood, and

FIG. 2.

CASE 4, 13, Family A.—Photograph showing excessive laxity of finger-joints.

Anderson [6] consider "the most plausible explanation (Bauer) [7] for the cases of blue sclerotics with brittle bones and deafness is that they are caused by a congenital mesenchymal defect, since all the structures involved in the syndrome come originally from this anlage." They add that this does not explain why other structures of mesenchymal origin, such as the heart and blood-vessels, are not usually affected. They cite, however, a case of blue sclerotics, deafness, and atrophy of bones plus cardiovascular degeneration. These same writers believe the defect to be of European descent. The tendency to fracture may be delayed, and does not necessarily occur in childhood, as in the case reported by Ormerod.[8] This individual had fractures at birth which were attributed to an assault upon his mother during her pregnancy. No further fractures occurred until he reached the age of about 40 years.

A further point of interest lies in the fact that the fractured bones generally heal rapidly—a rather curious phenomenon, since there seems to be a developmental defect in ossification. Although tending to be progressive, the condition does not necessarily shorten the natural span of life.*

* Darwin, in his "On the Origin of Species," instances as a whimsical correlation of growth the fact that cats with blue eyes are invariably deaf.

Four Families.

The following are short notes on the histories of the four families.

FAMILY A.—This is perhaps the most interesting of the four families, since three generations are still alive, all of them showing in a very striking manner

FIG. 3.

CASE 4, 13, Family A.—Photograph showing excessive laxity of knee-joint.

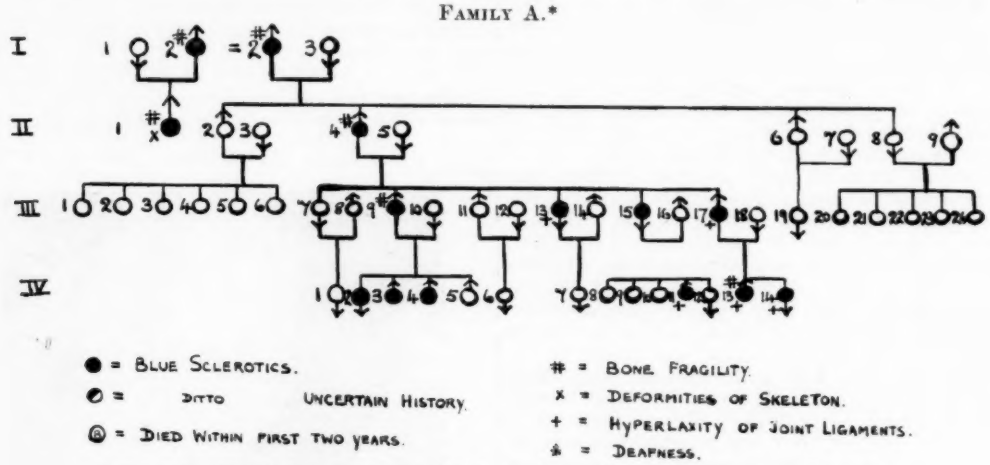
the hereditary lack of some constituent of the body essential to complete bone and joint formation.

The grandfather (II., 4) is now aged 67, and gives a history of an extraordinary number of fractures of different bones. He has well-marked blue sclerotics. Unfortunately, he has now become somewhat chary of meeting doctors, and we were unable to induce him to have X ray photographs taken. His son (III., 17), now aged 31, shows very well-marked blue sclerotics, but gives no history of fracture. There is in his case, however, an extraordinary looseness of the joints, so much so that several dislocations have occurred. Thus the heads of both radii are permanently dislocated and the ankles are so deformed as almost to amount to a permanent dislocation in the position of extreme pes planus. Radiograms show no evidence of fracture, but the skull is of that peculiar shape which is now recognised as typical of the condition—i.e., it has a curious projection of the occipital region and a marked degree of osteoporosis (Fig. 1). The chief interest in this member of the family lies in the fact that there appears to be an association of excessive laxity of joint ligaments with blue sclerotics but without any evidence of actual bone fragility, no fractures having occurred during the 31 years of life.

The youngest member of this family (IV., 13), a boy aged 4, was referred to one of us (G. H. S.) for advice regarding an extreme degree of flat-foot. The blue sclerotics were observed, and the family history was elicited. Excessive laxity of joints again appeared to be the striking feature of the case, but after the first examination the boy began to have fractures, and has since had three or four. The hyperlaxity of this boy's joints is well seen in Figs. 2 and 3.

The pedigree chart illustrated, embracing 51 individuals, shows that no less than 13 members of the family were affected in four generations, nine of them being males and four females.

FAMILY A.*



* The explanation of signs appearing in this family tree applies to all the pedigrees illustrated.

FAMILY B.—In the next family observed two generations were involved, and in their case the condition appeared to be transmitted from father to daughter. The father (III., 1) was admitted to a Glasgow hospital on the supposition that he was suffering from tuberculosis of the spine. In his case, again, hypotonicity of ligaments was the most striking feature, together with the marked blueness of the sclerotics. No history of fracture could be obtained, and the man's chief complaints were a decrease in height due to a progressive scoliosis together with severe sciatic pains in the legs due, no doubt, to pressure on the nerves. A photograph of the spine (Fig. 4) shows no apparent difference from that of an ordinary scoliosis. The daughter (IV., 4), like her father, had blue sclerotics, but in addition there was a history of repeated fracture. So far no hyperlaxity of the joints has dedeveloped. It is interesting to note that the tendency to deformity did not develop in the father until somewhat late in life, and was alleged to have been brought on by service in the army.

FIG. 4.

CASE 3, 1. Family D.—Radiogram showing scoliosis.

It will be seen from the pedigree chart that there is an indefinite history of blue sclerotics having occurred in the great-grandfather (I., 1) of the child.

FAMILY C.—The main interest in this family lies in the fact that we appear to be dealing with an *original* case. It will be seen from the pedigree chart that, although a very full family history comprising 55 persons was available, this case (IV., 21) was the first to exhibit bone fragility, hypotonicity of ligaments, and blue sclerotics. This boy, aged 4 years, has already been treated for fractures.

That such isolated instances of the disease are not very rare has been shown by Usher (unpublished communication to Bell), who describes one isolated case of blue sclerotics (one fracture) in an extensive pedigree of five generations. Bolten [9] also has described a pedigree with one case of blue sclerotics and bone fragility in a pedigree containing 11 cases of cretinism. More recently Hunter [10] has put on record another original outcrop of this defect. This youth, aged 17 years, had blue sclerotics and a history of more than 30 fractures. There was no history of deafness.

FAMILY D.—Chief interest in this pedigree centres round the frequent association of deafness, hypotonicity, and bluish sclerotics, but with only one exhibition of bone fragility. Case 4 (III., 12) was the source of the family history, and was the only subject observed.

This man, now aged 46, had been the victim of five accidents involving, in all, eight separate fractures. As a result of his last accident the left humerus, right tibia, and fibula were fractured—the tibia in several places. Eleven weeks after the accident, although the humerus which was impacted at the surgical neck appeared to be healing, there was still no union of the leg bones and no X ray evidence of callus formation. An experimental metabolic period was then held, and following it irradiated ergosterol (Radiostol, B. D. H., Ltd.) was administered. The next X ray plate was taken five weeks after the previous one, and three weeks after the institution of vitamin D therapy. Definite callus formation was evident. After a prolonged convalescence, the patient was eventually able to resume his occupation, that of a photographer, but he still (16 months after) requires the aid of two sticks.

While the number of affected members in these families is too small on which to base any definite statistical statement regarding the sex incidence, yet it is interesting to note that the male incidence is the greater—a finding contrary to that of Bell.[1] In addition, the female does not appear to be a more potent transmitter than the male.

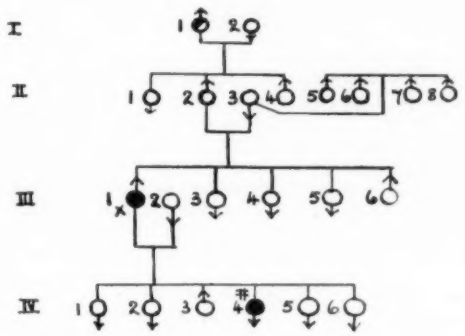
Metabolism.

Barker[11] in 1857 observed that the bones of a certain newly born infant had a very low ash content. Some years later Hildebrandt[12] while examining the body of a newly born child noted that the bones yielded easily to the cutting edge of a knife, and he concluded that the bones contained little ash. Several other cases suggestive of osteogenesis imperfecta have appeared in earlier literature but it is doubtful if they are all typical examples of this disease or inborn defect. More recently Sindler[13] has found that the bones in osteogenesis imperfecta contain about three times as much magnesium and about fourteen times as much sodium as the corresponding bones of a normal child.

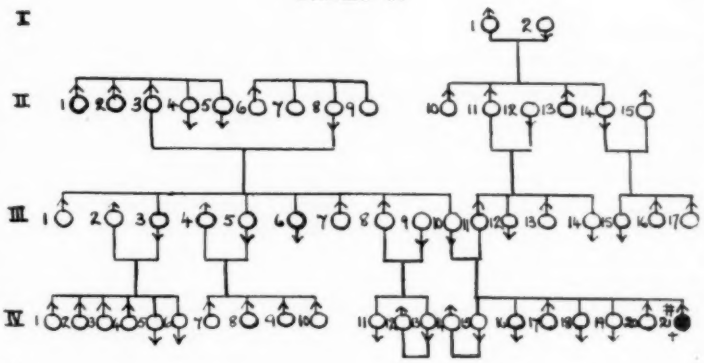
The first serious metabolic study of this disease was made by Bamberg and Huldschinsky[14] in an investigation of a 3 months' old child. These authors found that the retention of lime could vary considerably, without any therapeutic agent, from −0·019 to +0·111 g. CaO per day, during different metabolic periods. With cod-liver oil the daily retention was +0·114 g., and with phosphorus plus cod-liver oil retentions of +0·118 g. and +0·136 g. were noted. The therapeutic evidence was therefore rather inconclusive. Schwarz and Bass[15] in the same year found in a child suffering from this defect that the nitrogen and phosphorus metabolisms were approximately normal, so also was the fat retention and absorption. The calcium retention was only slightly below normal. Working on similar lines Schabad[16] investigated the mineral metabolism of a young female child who had had 12 fractures. The daily retention of CaO without treatment was +0·017 g. per kg. and that of P_2O_5 −0·0039 g. per kg. He obtained his best metabolic results with phosphorus plus cod-liver oil. Retentions of +0·033 g. CaO and +0·033 g. P_2O_5 per kg. per day were found. In two children, Bookman[17] found that during the active stage, phosphorus retention was higher than that of two normal children studied by Cronheim and Müller.[18] He also noted that the retention of magnesium was low during the active stage of the disease. More recently Tauber[19] has found a negative calcium balance in two infants belonging to the same family who suffered from this condition. Hunter[10] investigated a case of osteogenesis imperfecta in a boy aged 17 years. The blood calcium and phosphorus were found to be normal. This confirmed the previous observations of Flagstad, Zanger and Leven,[20] and also Shugrue, Rockwood and Anderson[6] as to the normality of the calcium and phosphorus content of the blood in this condition. Hunter[10] found that there was no apparent divergence of the metabolic exchange of calcium from the normal. He admitted, however, that his metabolic experiments might be fallacious owing to the extremely low intake of calcium.

It is obvious, from the foregoing résumé, that the findings of these different workers on the mineral balance are very varied. It was hoped that an examination of certain members of the families previously recorded might yield more definite information. The present series of metabolic investigations are based on the determination of the mineral balance rather than on isolated determinations of the calcium and phosphorus of the blood.

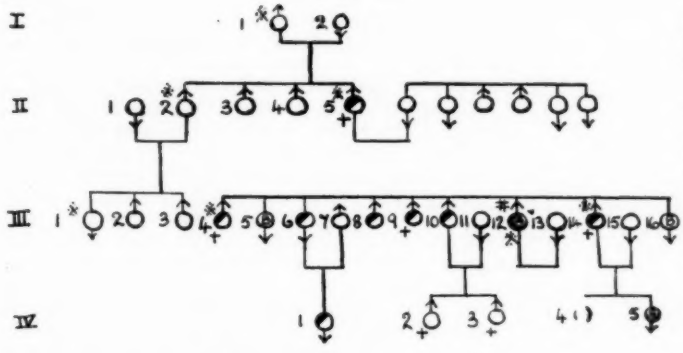
FAMILY B.



FAMILY C.



FAMILY D.



GENERAL DESCRIPTION OF METABOLIC EXPERIMENTS.

The patients were housed in a small experimental ward and attended by nurses trained in the conduct of metabolic experiments. The urine was collected

in 24-hourly specimens, made up to a constant volume, and preserved with thymol in chloroform. The various periods during which the fæces were collected were marked off with carmine taken in the form of capsules. The fæces were dried before being analysed, with the exception of certain of the fat determinations, which were made on the fresh moist stool. A pre-period of four to five days was usually allowed in order to obtain equilibrium. Case 1 remained in bed during the experimental period—his ankles being encased in plaster. Cases 2 and 3 remained active throughout the period. The fourth subject lay in bed throughout the periods of experimentation with his leg fixed in extension.

ANALYTICAL METHODS.

Urine.

Calcium and magnesium: Shohl and Pedley.[21] Phosphorus: Neumann's wet ash method with subsequent precipitation, as phosphomolybdate.

Fæces and Food.

Calcium and magnesium: Material ashed, any iron removed, then calcium and, finally, magnesium precipitated as in the urinary analyses.

Phosphorus: Material ashed in presence of $Ca(OH)_2$, and then phosphorus precipitated as phosphomolybdate.

Fat: Saxon's [22] method.

ANALYTICAL DATA.

CASE 1 (IV., 13, Family A), 3 10/12 years; weight, 17·5 kg. Period of collection, six days.

Daily intake of food.—Milk, 630 c.cm.; brown bread, 60 g.; digestive biscuits, 45 g.; fresh butter, 35 g.; tea, 300 c.cm. (one level teaspoonful); dried egg, 9 g. (served as a custard); dried tomato soup, 10 g. (served as soup); dried apples, 10 g. (served as stew); and sugar, 5 g.

On three different occasions the fæces were analysed for fat.

—	Daily intake.	Daily output.			Daily retention.	Daily retention (per kg.)	Retention %.
		Urine.	Fæces.	Total.			
CaO	1·981	0·135	1·557	1·692	0·289	0·016	14·5
P_2O_5	2·877	1·338	1·294	2·632	0·245	0·014	7·1

CASE 2 (III., 17, Family A), 31 years; weight, 60·5 kg. Period of collection of urine and fæces, six days.

Daily intake of food.—Milk, 30 g. (dried milk); brown bread, 170 g.; butter, 84 g.; dried egg, 18 g.; dried tomato soup, 15 g.; steak, 100 g.; dried apples, 15 g.; digestive biscuits, 1; marmalade, 1 desertspoonful; tea, 760 c.cm. (three level teaspoonfuls); and sugar, 20 g.

—	Daily intake.	Daily output.			Daily retention.	Daily retention (per kg.)	Retention %.
		Urine.	Fæces.	Total.			
CaO	0·835	0·315	0·483	0·798	+0·037	+0·0006	4·4
P_2O_5	2·91	2·00	0·880	2·88	+0·03	+0·0005	1·0

CASE 3 (IV., 21, Family C), 4 years; weight 16 kg. Period of collection, eight days.

Daily intake of food.—Milk, 600 c.cm.; digestive biscuits, 35 g.; brown bread, 40 g.; fresh butter, 45 g.; oatmeal, 20 g. (served as porridge); dried kidney soup, 15 g. (served as soup).

Aliquot fraction of day's intake taken for analysis. A fat analysis of the fæces was performed about six months later.

—	Aver. daily intake.	Daily output.			Daily retention.	Daily retention (per kg.)	Retention %.
		Urine.	Fæces.	Total.			
CaO	1·798	0·071	1·431	1·502	0·296	0·0185	16·4
P_2O_5	2·788	0·854	1·299	2·153	0·635	0·039	22·7
MgO	0·294	0·059	0·234	0·293	0·001	—	—

Blood-serum Ca = 10·36 mg. per 100 c.cm. serum.
Blood-plasma P = 3·38 mg. per 100 c.cm. plasma.

CASE 4 (III., 12, Family D), 46 years; weight, 60 kg. Periods of collection, seven and five days respectively.

Daily intake of food.	*Period 1.*	*Period 2.*
Milk	630 c.cm.	630 c.cm.
Tea	200 c.cm.	300 c.cm.
Brown bread	75 g.	100 g.
Fresh butter	55 g.	65 g.
Dried lentil soup (served as soup)	15 g.	15 g.
Dried apples (served stewed)	15 g.	15 g.
Eggs	6 g.	15 g.
Digestive biscuits	90 g.	90 g.

Aliquot fraction taken for analysis.

Period.	—	Daily intake.	Daily output.			Daily retention.	Daily retention (per kg.)
			Urine.	Fæces.	Total.		
1	T.N.	8·23	7·05	0·53	7·58	+0·65	+0·0108
	CaO	2·05	0·51	1·26	1·77	+0·28	+0·0047
	P_2O_5	2·97	1·95	0·78	2·73	+0·24	+0·0040
2	CaO	2·07	0·49	1·12	1·61	+0·46	+0·0077
	P_2O_5	3·05	1·76	0·87	2·63	+0·42	+0·0070

T.N. = Total nitrogen.

Discussion.

When consideration is taken of the relatively vast amount of work which has been done on the metabolism of calcium and phosphorus in some of the diseases of infancy and childhood, it is rather surprising to find how little is known about the mineral requirements of the normal child at various age-periods. Even in normal children—that is, children with no apparent defect—we find extraordinary differences in the rate of growth From a study of normal infants ranging up to one year old, Telfer [23] found that the daily retention of CaO per kilo ranged from +0·055 to +0·124 g. and that of P_2O_5 from +0·055 to +0·123 g.—i.e, the retentions were approximately equal. Cronheim and Müller [18] found slightly lower figures for these elements. Jundel,[24] in a study of the mineral requirements of two normal children, K and N, aged respectively 5½ and 7¾ years, found that the daily retentions of CaO per kg. body-weight were +0·003 and +0·029 g.; of P_2O_5 +0·032 and +0·030 g.; and of MgO +0·014 and +0·016 g. Dr. Ford and Dr. McRae, of the Royal Hospital for Sick Children, Glasgow, have furnished us with certain, as yet unpublished, data regarding the mineral requirements of two normal children aged 2½ and 5 years respectively—ages more comparable with the children of the present series. The retentions per kg. per day were for CaO +0·042 g. and +0·039 g., and for P_2O_5 +0·035 g. and +0·026 g. respectively. These retention figures are distinctly lower than the requirements of younger children (vide Telfer).[23]

Turning to the present series, it is obvious that in the two children (Cases 1 and 3) we are dealing with a defective utilisation of calcium, phosphorus, and magnesium. The retentions of CaO per kg. per day in Cases 1 and 3 were respectively +0·016 g. and +0·185 g. The retentions of P_2O_5 were variable, that of Case 3 appeared to be only slightly lower than normal, +0·039 g. per kg. per day, while that of Case 1 was very much lower, +0·014 g. per kg. per day. The difference in the retention of phosphorus in the two cases may bear some relation to the clinical condition, for Case 1 was kept in bed throughout the metabolic period, his ankles being encased in plaster, while Case 3 moved freely about the ward. In a previous investigation one of us (Cuthbertson [25]) has shown that in adults within two to three days from the commencement of a period

of muscular rest (fixation of a lower limb in a splint) there results a loss of sulphur, nitrogen, phosphorus, and, to a lesser extent, calcium. The catabolic loss of these elements usually occurs in that order of priority. The S.N. ratio suggested that the source of the material was some sulphur rich tissue—presumably muscle. The degree of immobilisation of Case 1 might be sufficient to account for a diminished anabolism, and since 20–30 per cent. of the total phosphorus content of the body is contained in tissues other than bone, the retention of phosphorus would be affected to a greater extent than that of calcium. Since bone is relatively richer in CaO than it is in P_2O_5 a defective ossification, provided it were not accompanied by a similar defective soft tissue development, would cause a greater lowering of the retention of CaO than it would of P_2O_5. Such an explanation would probably account for the seeming disproportionate retentions of CaO and P_2O_5 occurring in Case 3.

The retention of magnesium as determined in Case 3 appeared to be very low.

The natural question arises as to whether these low retentions of calcium, phosphorus, and magnesium are due to a faulty utilisation by the bone-forming elements or due to some primary defective absorption from the alimentary tract. The urinary excretion of lime being approximately 5–8 per cent. of the total output might suggest that probably more lime is being absorbed than can be utilised, and that the defect lies in the bone-forming elements. As in practically all questions of mineral metabolism, it is impossible to state definitely which factor is mainly responsible. But viewing these associated abnormalities as a whole it would appear more reasonable to believe that they are the result of some elemental defect, which may prove to be of mesenchymal origin, as has been suggested by Bauer.

The mineral metabolism of Case 2 (father of Case 1) showed no outstanding features, a result which was rather to be expected, as clinically the patient appeared to be in equilibrium. There was, however, a very slight retention of lime and phosphoric acid. The fractions of the total output of CaO and P_2O_5 excreted in the urine were comparable to the figures found by one of the present writers (Cuthbertson [26]) in a series of normal cases on similar diets.

The metabolic data of Case 4 have already been described elsewhere (Cuthbertson [26]). These analyses were made during the healing of several fractured bones—the result of a severe accident. Eleven weeks after the accident there was still no union of the leg bones and no X ray evidence of callus formation. At this point a metabolic period was held. Following the first experimental period irradiated ergosterol was administered (B. D. H., Ltd.—Radiostol). A few weeks later definite callus formation was visible. A second metabolic period was instituted one month after the first. There was a small but definite retention of both calcium and phosphorus during the first period, and this was increased considerably during the second, the CaO retention rising from 0·0047 to 0·0077 g. and the P_2O_5 from 0·0040 to 0·0070 g. per kg. per day. The recovery was very slow.

The capacity for bone healing in osteogenesis imperfecta is supposed to be unimpaired. Indeed the fractured bones unite very rapidly. It is possible that the imperfect delayed union in this case was due primarily to the nature of the fracture and not from any inborn defect. Vitamin D did appear to help the healing process, but too much stress cannot be laid on such an isolated case, for fractures are notoriously irregular in their healing. The administration of vitamin D to a few normal fracture cases did not result in any obvious specific improvement (Cuthbertson [26]).

The passage of a bulky grey stool one day by Case 1 suggested that an investigation of the fat distribution of the fæces might yield some information. The total fat content was generally low, but of this the neutral fat formed a rather larger proportion than is usually reckoned as normal. It is usual to find a relatively high neutral fat content when the bulk of fæcal material is large.

Fæcal Fat Analyses.

—	Case 1.			Case 2.	Case 3.
	P. 1.	P. 2.	P. 3.		
% D.M.	39·6	42·5	34·7	21·2	22·6
Total fat (% D.M.)..	27·0	12·4	10·1	10·5	18·9
Free and combined fatty acids calculated as stearic acid (% D.M.) ..	17·4 (64·4 %)	7·8 (62·9 %)	5·65 (56·0 %)	4·3 (41·0 %)	8·8 (46·5 %)
Combined fatty acids (% D.M.) ..	—	—	2·91 (28·8 %)	3·0 (28·6 %)	1·5 (8·0 %)
Neutral fat (% D.M.)	9·6 (35·6 %)	4·6 (37·1 %)	4·45 (44·0 %)	6·2 (59·0 %)	10·1 (53·5 %)

Figures in parentheses indicate the distribution of the fat components expressed as percentages of the total fat.
% D.M. = percentage of dry matter. P. = period.

The serum calcium of Case 3 was 10·4 mg. per 100 c.cm., and the plasma phosphorus 3·04 mg. per 100 c.cm. The serum calcium of another case was 9·75 mg. per 100 c.cm. This latter case had a well-marked hereditary history. Blood analyses therefore appear to reveal no deviation from the normal. This is in agreement with the other workers in this field.

As regards therapeutic measures little can be said. If the disease is a primary defect there probably can be little hope of ever curing the abnormality. Thyroid, thymus, and hypophyseal preparations have been tried, so also has strontium and arsenic. More recently it has been suggested that the condition is due to a parathyroid abnormality. Schabad [16] and Bookman [17] both found that they obtained the greatest retention of calcium when cod-liver oil combined with elementary phosphorus was used. Bamberg and Huldschinsky's [14] observations were inconclusive owing to the wide variability of the mineral retention. Phosphorus administered in experimental rickets appears to cause calcification in certain areas of bone, but these do not appear to be the rachitic zones (Hess [27]). It may be that the increased retentions found by Bookman [17] and Schabad were due to this obscure action of phosphorus.

From the age of one year onward Case 3 received cod-liver oil from time to time. Vitamin D in the form of radiostol was administered after the metabolic period described above. During the following year the patient took either this substance or cod-liver oil. There appeared to be a slight clinical improvement at first, but as time passed this was doubtful. The administration of cod-liver oil preparations in Case 1 did not appear to have any striking clinical improvement; indeed, the bones fractured for the first time some time after the administration of these preparations. Vitamin D did appear to increase the formation of callus in Case 4, although the end-result of the healing of the fractures was not very satisfactory.

These findings are in agreement with those of

Hess,[27] who in his admirable review of rickets and allied diseases states that osteogenesis imperfecta is not benefited by any of the agents which have proved themselves to be specific in rickets.

Summary.

(1) Pedigree tables of four families one or more of whose members have suffered from one or more of the associated defects of bone fragility, blue sclerotics, otosclerosis, and liability to dislocations and sprains have been described. (2) Metabolic studies have revealed definitely diminished retentions of calcium, phosphorus, and magnesium in two children affected with the associated defects of bone fragility, blue sclerotics and hypotonicity of ligaments. There did not appear to be any marked deviation of these minerals from the normal excretory paths in these children and in two adults studied. The concentration of calcium and phosphorus in the blood was normal. (3) Irradiated ergosterol and cod-liver oil did not appear to have any specific effect in these abnormalities.

In conclusion, we wish to thank Mr. John Patrick and Mr. James Taylor for allowing us to describe two of these cases.

We are indebted to British Drug Houses, Ltd., for a supply of radiostol.

REFERENCES.

1. Bell, Julia: Eugenics Lab. Pub., 1928, University Coll., London, Memoir Series, No. 24, The Treasury of Human Inheritance, vol. ii. pt. 3.
2. Ekmann, O. J.: Descriptio et casus aliquot osteomalocinæ, Upsaline, 1788, quoted by Bell (Ref. 1).
3. Henzschel: Zeit. Ophthal., 1831, i., 52, quoted by Bell.
4. Lobstein, J. F.: Traité d'Anatomie Pathologique, Paris, 1833.
5. Cornaz, C. A. E.: Des abnormités congénitales des yeux et de leurs annexes, Lausanne, 1848, p. 67.
6. Shugrue, J. J., Rockwood, R., and Anderson, E. W.: Arch. Int. Med., 1927, xxxix., 98.
7. Bauer, K. H.: Zeit. f. Chir., 1920, cliv., 166.
8. Ormerod, E. L.: Brit. Med. Jour., 1859, ii., 736.
9. Bolten, H.: Deut. Zeit. f. Nervenheilk., 1919, lviii., 343, quoted by Bell.
10. Hunter, D.: THE LANCET, 1927, i., 9.
11. Barker, T. H.: Brit. Med. Jour., 1857, ii., 823.
12. Hildebrandt, H. M.: Arch. f. path. Anat., 1899, clviii., 426.
13. Sindler, A.: Zeit. f. Kinderheilk., 1926, xlii., 85.
14. Bamberg, K., and Huldschinsky, K.: Jahrb. f. Kinderheilk., 1913, lxxviii., 214.
15. Schwarz, H., and Bass, M.: Amer. Jour. Dis. Child., 1913, v., 131.
16. Schabad, I. A.: Zeit. f. Kinderheilk., 1914, xi., 230.
17. Bookman, A.: Amer. Jour. Dis. Child., 1914, vii., 436.
18. Cronheim, W., and Müller, E.: Biochem. Zeit., 1908, ix., 76.
19. Tauber, M.: Monat. f. Kinderheilk., 1927, xxxvi., 12.
20. Flagsted, A. E., Zanger, E., and Leven, L.: Minnesota Med., 1924, vii., 800.
21. Shohl, A. T., and Pedley, F. G.: Jour. Biol. Chem., 1922, l., 537.
22. Saxon, G. I.: Ibid., 1914, xvii., 99.
23. Telfer, S. V.: Quart. Jour. Med., 1922, xvi., 63.
24. Jundel, J.: Nordiskt. Med. Arkiv., 1914, xlvii., 1, quoted by Lusk, G., Science of Nutrition, London, 1928.
25. Cuthbertson, D. P.: Biochem. Jour., 1929, xxiii., 1328.
26. ,, ,, ,, : Ibid., 1930, xxiv., 1244.
27. Hess, A. F.: Rickets, Osteomalacia and Tetany, Philadelphia and London, 1929.

RATES ON FALKIRK INFIRMARY.—The old buildings of Falkirk Infirmary were assessed to local rates on the basis of £2 per bed with a total of £158, but the new infirmary has been assessed at £4 per bed, making a total of £480. The trustees appealed to the burgh valuation appeal court, which has reduced the valuation to £360 for this year only. In Edinburgh and Glasgow hospitals are exempt from rating.

HARTLEPOOL ISOLATION HOSPITAL. — Recently Alderman Clarkson, chairman of the West Hartlepool health committee, laid the foundation-stone of a new infectious diseases hospital which is being erected by the corporation at a cost of £35,000. There will be 40 beds, 22 in the scarlet fever and 16 in the diphtheria blocks. There will also be an observation block containing eight cubicles. The administration block will provide accommodation for the medical officer, the matron, and 16 nurses.

PHYSICAL TREATMENT OF PROSTATIC LESIONS.

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PROSTATIC disease, varying from functional disorder to organic change, is very common after the fiftieth year of life. This paper presents the results of our long experience of the application of general medicine and of urology, and of both together, in alliance with physical methods—chiefly electrical. Important factors are the proper selection of cases and the selection of intensity, source, and application of current. It is not wise and rarely possible to rely on one procedure only.

The existence and pathogenesis of the five lobes of the prostate must be constantly remembered. "Enlargement of the prostate" is not a complete pathological or diagnostic statement. The source and the result of the enlargement must be determined with the aid of all modern diagnostic methods, both clinical and laboratory, and the general health of the patient must be thoroughly investigated. It is essential to recognise without any doubt the moment when the surgical stage is reached. Operation is imperative before lifelong or fatal damage supervenes in adjacent organs.

The aim of electrotherapy is to re-establish active nourishment and cell growth in chronically congested and inflamed areas, and to improve lymphatic function and the absorption of exudate. All physiological processes are deliberate and gentle, and sensitive to very small quantities of chemical substances. The electrons are amazingly susceptible to electrical influences, and electrotherapeutic measures must induce a gradual restoration of function, without sudden sensation, over-stimulation, pain, or discomfort. The nervous influences should be quieting, not exciting; restorative, not depressant. Mild currents, long sessions, and reasonable but always uniform frequency are to be preferred to strong currents, short applications, and irregular repetitions. At the same time, systemic measures must aim at treating the "body at large," because, like the uterus, the prostate is an index of the general health and may influence the whole body.

Method of Application.

The therapeutic measures for prostatic conditions are: (1) Heat by conduction (developed by the current in overcoming body resistance and in increasing cellular activity, as in diathermy and galvanism). (2) Heat by radiation, as in luminous rays and infra-red rays. (3) X rays in small doses as a stimulant and in large doses as a resolvent of the hyperplastic tissues. Their actinic and hæmostatic actions are fully recognised. (4) Static wave current, for its fibrillary tissue contraction, promoting drainage and modifying septic absorption. (5) Galvanism, for its sedative or relaxing electrolytic effect through the negative pole and stimulating or contracting effect through the positive pole.

Phototherapy and mild diathermy should embrace the whole lower abdomen and pelvis, thus modifying the circulation over the widest possible field; contrariwise, the concentration of any method of treatment

upon the acute disease is a mistake. The ovary, testicle, and nerves never accept severe treatment. Chronic conditions permit the direction of judiciously energetic measures on the focus. Subacute lesions fall between these limits, and only the results of treatment can determine its selection. Error, if any, had better be on the side of hypotherapy than of hypertherapy.

GALVANISM.

Galvanism induces positive or negative polarity effects, causing electrolytic or chemical, nutritional or destructive changes according to the intensity of the current and the method of its employment. The best results are obtained from batteries and, failing this, from a generator free from the fluctuations of the street current. A dependable and graduated rheostat and an accurate milliampèremetre are essential. The current should never be used without a meter in circuit. An insulated electrode attached to the negative pole is used in the rectum for acute and subacute conditions because it is sedative and relaxing. The positive pole is used for chronic conditions because it is stimulating and contracting. A moist pad about 6 by 4 inches connected to the other pole is placed on the pubic region under a sandbag. The amount of current is well below 10 milliampères for acute, and up to 10 milliampères for subacute or chronic conditions, ascending in intensity and producing sensation but no pain. When, however, the positive pole is used in the rectum the electrode must be of ample size and the current very mild in order to prevent adhesive or other undue local reaction.

Galvanism, interrupted by manual or mechanical means, is used to stimulate contractions and to create massage effects. The rate of interruptions should correspond with the known rate of tissue fibrillation. The indications for galvanism are: first, the relief of congestive states in non-operative treatment or inoperable cases, alternating with or as a substitute for other methods; secondly, treatment of post-operative atony or damage of the muscle wall and sphincter.

SINUSOIDAL CURRENT.

The sinusoidal current is a rising and falling, unidirectional, continuous current, reversing polarity at the end of each cycle; it causes alternate contraction and relaxation of both striped and unstriped muscle, but without electrolytic effects. The details of its application are the same as for galvanism. The sine wave should have the full rate, half-rate, or quarter-rate of the pulse and be governed by a good controller. The strength of current is determined by comfortable muscular contractions and sensations and proper meter reading. Galvanic sinusoidal and interrupted galvanism benefit the same types of case.

STATIC WAVE.

The source of the static wave is a motor-driven 8, 12, or 16 revolving-plate static machine, controlled by a multiple step-up rheostat. The static wave is a pulsatory capacity discharge of a unidirectional, low-ampèrage, high-voltage current, causing electrophysical contractions and relaxations in tissue and protoplasm. The greater the rotation speed and the wider the spark-gap of the static machine, the greater the potential of current. The static wave current should produce 60–120 capacity discharges per minute and should never cause pain during or after its application. An insulated metal electrode attached to the positive side is applied for clonic action, or as a non-traumatic gross and cellular massage, and the negative pole is earthed. A high-vacuum glass electrode is connected with the negative side for actinic influence and superficial tonic contraction; the positive pole is earthed.

HIGH FREQUENCY.

"High frequency," "alternating," or "oscillating" are synonymous terms for the current produced by a standardised high-frequency machine. A hot-wire meter reading from 0 to 2500 m.a., an open multiple-point spark-gap, and a five-point step-up rheostat control the current. High-vacuum glass electrodes are used for the oudin or unipolar current. An insulated metal electrode on the pubes and another in the rectum or under the buttocks are employed for the bipolar or direct D'Arsonval current. The heat is generated by the resistance overcome by the current in passing through the tissues and by the increased cellular activity. It is always mild and without unpleasant reaction. Such heating is vaso-dilating, nutritional, and relaxing; greater heating is inflammatory, depressing, and possibly harmful. Local diathermy induces healthful vascular and lymphatic dilatation and adds to the nutrition of the prostate in any lesion in which other electrotherapeutic measures are to supplement it.

X RAYS.

X rays are produced by the static machine[1] or the transformer. The high voltage of the static machine gives penetration and its low ampèrage decreases irritation. It is probable that a 60 milliampère-minute treatment with the static machine (at 2 milliampères for 30 minutes) equals or surpasses the same dose from a transformer at 10 milliampères for six minutes. A 5 in. spark-gap on the static machine equals a 10 in. gap on the transformer, and tubes should back up a 5 in. gap accordingly. Small doses cause stimulation and hyperæmia; large doses induce tissue contraction and hæmostasis and decrease cell-growth and cellular disintegration, particularly in neoplastic conditions.

X rays are of service in all hyperplastic and hypertrophic conditions, because of their disintegrating influence. In certain infections X rays sterilise the field and thereby decrease the growth of the infecting organisms.

Application to Various Conditions.

The prostatic conditions for which electrotherapy is useful are congestion, inflammation, infection, hypertrophy, and neoplasm. In the recovery period after operation it is valuable in abscess and calculus.

CONGESTION.

Congestion is either extrinsic, arising in the adnexa or the system at large and appearing in the prostate secondarily or concomitantly; or intrinsic, arising within the prostate itself. Extrinsic congestion is secondary to or sympathetic with adnexal or systemic conditions and therefore usually functional. In general practice, systematic examinations often reveal engorged prostates that have arisen amid strange symptom-complexes, such as urethral infection and stricture; urinary calculi; rectal fissures, fistulæ, ulcers, and infection; hæmorrhoids and pruritus ani; organic spinal disease; hepatic stasis; general ill-health, tuberculosis, malaria and cancer; traumatisms and fracture of the coccyx. Intrinsic congestion may be functional or organic. Functional congestion is caused by excesses or perversions of intercourse and masturbation or is associated with other lesions, as already stated. Its symptoms are altered urinary and sexual function. The chief complaint—e.g., dysuria, pollakiuria and retention—may rest on the œdema. Sexual activity is depressed, over-stimulated, or unbalanced.

After removal of the cause as the primary essential, the indications are decongestion and soothing. Both objects are attained by the diathermy-static wave or the light-static wave sequence, which are excellent alternatives. Diathermy (500 m.a.) is applied between a large suprapubic and a large gluteal electrode, exactly over and under the prostate and all its adnexa. Radiant heat and light over the same regions are valuable and efficient. Diathermy balances the circulation and light withdraws the blood to the surface and releases vascular stasis and spasm. Thus each corrects the indolence. The static wave current provides the best deep massage. For those who possess no static machine two methods are recommended: (1) Conservative and skilful digital massage is necessary when the microscopic findings and clinical signs indicate follicular prostatitis. (2) The interrupted sinusoidal current at a rate of 30–60 cycles per minute provides a massage action also, but not equally efficient decongestion.

Organic congestion precedes, accompanies, and follows all the prostatic diseases in our classification. Its symptoms are urinary and sexual disturbance and often exceed those of the underlying disease, at least temporarily, and thus in hypertrophy may be the cause of sudden obstruction and become serious.

[1] A high-speed static machine of the Baker type, which should develop 10 m.a. and a potential equal to a 20-inch spark-gap between balls of 0·866 of an inch in diameter.

The more advanced and profound the underlying process—unless relieved quickly—the less remediable will be the congestion. Operation, if indicated, should not be delayed. Otherwise all the foregoing methods are available, with the chief restriction that their intensity must not disturb the primary disease. Harm is likely to follow over-treatment with physical measures. X ray usually benefits these lesions primarily and the active or passive congestion secondarily.

INFLAMMATION.

The treatment of non-infective inflammation is largely medicinal or surgical until convalescence is well established, then by electrotherapeutic measures. The prostate is a localising point for much external infection, such as the gonococcic, and for internal infection such as the streptococcic, staphylococcic, and colon bacillary, variously associated with urinary, intestinal, or systemic foci. The kidneys, ureters, bladder, urethra, teeth, tonsils, intestines, abscesses, ulcerations, and fistulæ (especially about the anus) are common sources. The prostate may become a focal absorption point and damage the system at large. The prostatic focus may be deceptively quiescent after its bacterial invasion while the processes in the body-at-large are active, as in arthritis. The influence of a systemic and the presence of a focal tuberculosis must not be overlooked. The diagnosis depends on systematic search for the original focus and on laboratory methods for identifying the organisms.

The focus of origin must first be removed. During the acute periods sedative treatment and decongestion of the prostate are indicated. Radiant heat and light, over the lower half of the abdomen and back and the perineum in turn, and in alternation with mild diathermy between two large electrodes at least 8 in. by 10 in. in size, often prevent the inflammation from becoming an abscess and quiet all the annoying symptoms. This result is analogous with those of hot sitz-baths, which, when properly given, are serviceable.

During the chronic stages mild stimulation is provided by cautiously graduated diathermy through the prostatic electrode, and by the actinic action of the high-vacuum glass electrode attached to the negative pole of the static machine or to the Oudin terminal of the high-frequency machine. With retention of exudate in the acini, drainage is maintained by the massage of the static wave or sinusoidal currents. Exceptional cases require digital massage and a check-up by means of it when drainage seems inefficient. Massage specimens for noting the progress and determining the finality of cure are essential. The general health should be maintained, to overcome the acute or chronic infection.

ABSCESS.

Suppurative posterior urethritis almost always precedes infection of the prostate, which is usually followed by suppurative seminal vesiculitis (*a*) without obstruction and with drainage, or (*b*) with obstruction and without drainage, resulting in abscess of these sacs. The suppurative prostatitis may be follicular, involving many acini, as many focal abscesses, or including large portions or even the whole of the gland in one pus-cavity. No electrotherapy of the massage type should be employed until outlet and drainage of the pus have been rendered adequate and unimpeded by surgical intervention. Abscess may occasionally be prevented by the methods adapted to acute infections. In all established cases electrotherapy is contra-indicated, except radiant heat and light and infra-red rays for quieting pain, vascular spasm, and local œdema. The static wave and diathermy are always omitted when there are accumulations of pus. The surgical rule must be followed: where there is pus, evacuate it. During early and late convalescence the methods already described for acute and chronic infection are valuable, especially in promoting early and complete resorption of infiltration and the reduction of scar tissue. Old sinuses usually heal under radiant heat, infra-red rays, mild diathermy, and X rays. The negative galvanic current will often soften cicatrices. In all cases systemic measures to build up the general health and resistance are required. Vaccines and serums are excellent adjuvants.

HYPERTROPHY.

This is a surgical condition in most cases; middle lobe cases are always surgical, because of the absolute valve-like obstruction. Nevertheless, more and more of these lesions will escape surgery when the timely selection and application of physical measures to them are made as carefully and consistently as the steps of diagnosis are now. Temporising methods must not be allowed to permit infection of the upper urinary tract. Hence, unless the results of physical measures are positive, progressive, and permanent, such methods had best be relegated to the after-care for repair of the deep operative field and restoration of the function of the bladder. The recognition of the surgical syndrome belongs to the urologist. No border-line or advanced case should be treated without a urologist's opinion, or empirical methods will only invite extension of the infection, frequently to the kidneys and occasionally to some other point. It may require very little decomposition and infection of residual urine to excite serious pathogenesis.

The congestion or œdema and the inflammation of hypertrophy indicate all the treatment described under each of these heads. The hypertrophy itself may be soft and adenomatous or hard and fibrous. The massage action of the static wave current is excellent in the soft type to remedy stasis in blood and lymph, atony in gland tissue, and asthenia in nerves. The X ray is valuable in causing reduction of cellular infiltration and proliferation; persistent use of X rays may profoundly modify this phase of the disease and establish a long relief. In fibrous hypertrophy physical measures, if long continued, tend to condense the fibrous tissue and thus increase the obstruction and other symptoms. The fibrous prostate is usually surgical. Cystitis and pyelonephritis, if present, require their usual local and systemic relief. Attention to the general health is as important as to the prostatic hypertrophy.

NEOPLASM.

Pre-operative and post-operative treatments are valuable. The entire trunk from the navel down should receive cross-fire X ray therapy through the right and left halves of the abdomen and the perineum in turn. Two treatments may be given to each field, making six in a short course, or 12 in a long course. It is well to give such a course immediately before operation and another immediately after operation, even before the wound has healed.

Radiant heat and light applied to each field, two visits after the X ray, prevent or decrease the tendency to X ray dermatitis. Some day we may reach the ideal of X raying all enlargements of the prostate on the principles that so many are ultimately neoplastic, if not cancerous, and that any cellular increase is quieted, if not resorbed, by X raying. A therapeutic policy of this kind is very difficult to establish on

account of the inertia of the average physician and the expense to the patient.

CALCULUS.

Physical therapy in calculus of the prostate must follow operative removal of the concretion. However, the better the infections are treated the surer the prevention of calculus. This truism applies to bacteria of intestinal origin, notably *Bacillus coli*, because in many patients they are potential stone-producers. After operation preventive measures include correction of the flora of the intestine with bacteria of the lactic acid group and milk-sugar derivatives to destroy the *B. coli*. The chronic infection in the prostate is treated and general health and resistance are attended to as already detailed. Sinus, if present, will usually yield to the same measures.

Conclusions.

The causes, pathology, and results of prostatic disease are highly various and uncertain. The result of any form of physical therapy cannot be immediate, because all forms are slowly active and because the lesions are all profound and many insidious in onset and progress. But the terminal outcome of physical treatment is usually very satisfactory, especially when the cases are studied and the methods selected according to the suggestions of this paper, which is based on close study of both urology and physical therapy through 25 or more years. Our experience supports our opening paragraphs as to the value of physical therapy in the pre-operative, operative, and post-operative periods of prostatic conditions. Above all, its value is greatest in preventing or postponing operations on patients who would not survive, or whose paucity of resistance and recuperative power is the cause of unsatisfactory terminal results.

INJECTION OF HIGHLY PURIFIED LIVER PREPARATIONS IN PERNICIOUS ANÆMIA.

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THE treatment of pernicious anæmia is now well established—consisting of some form of liver or hog's stomach [5] therapy. These forms of treatment are entirely adequate, when sufficient dosages are prescribed, in the great majority of cases that come under observation. It is important to realise, however, that before any oral method of treatment for pernicious anæmia can have any marked effect on the blood picture, a "latent period" of some five to 12 days must elapse. At the end of that time the reticulocytes will have reached their maximum value and the red blood-cells and hæmoglobin will have commenced to increase. With cases showing initial red cell counts of about 800,000 per c.mm. or more I have usually found hog's stomach by mouth sufficient,[5] but from time to time patients have been admitted to hospital practically in extremis with blood counts of less than this number. It will be appreciated, therefore, that when a patient is seen for the first time with a very low red cell count (less than 800,000 per c.mm.) that some more urgent and rapid treatment is required than the ordinary oral therapy. This is especially so in those cases that are extremely ill where oral administration is sometimes impracticable on account of nausea and vomiting, or refractoriness of the patient. Blood transfusion has been the usual routine with most physicians in cases of pernicious anæmia with initial red cell counts of less than about 1·5 million, and good results have been reported.[3] On the other hand, it has been a frequent observation that patients admitted to hospital with very low counts (600,000–1,000,000) have been strong auto-agglutinants rendering blood transfusion not so satisfactory, while the responses to subsequent treatment with liver or hog's stomach have been impaired. It was obvious, therefore, that in such extremely ill cases some method other than blood transfusion would be valuable in helping to span the "latent period" before oral therapy could exert its influence. Last year Gänsslen [4] described the results obtained, using an extract of liver injected intramuscularly, together with the oral use of liver extract. More recently, Castle and Taylor [1] discussed the intravenous use of a crude extract of liver (fraction G, Cohn [2]). This contained a blood pressure lowering substance and therefore required great care in its use; they described good results in two cases that responded within five days after an injection of their material.

The present communication is a preliminary note of some work that has been in progress in this department along similar lines with the object of elaborating a rapid and convenient method of treating the severest cases of pernicious anæmia with highly purified and concentrated preparations of liver and stomach. The material employed was prepared according to a method similar to Cohn's technique,[2] but to remove all blood pressure depressants the protein fraction was separated as completely as possible with the isolation of a preparation similar to fraction S. This was free from carbohydrates, lipoids, and proteins, and the intravenous injection of a solution of 7·5 c.cm. (equivalent to 150 g. of fresh liver) did not produce any alterations in the blood pressures of cases of pernicious anæmia. Since the large quantities of this material necessitated larger plant than was available in this department at the time, the product was prepared for me by Evans' Biological Institute, Runcorn; this highly purified and potent preparation was used in the following work.

METHOD OF ADMINISTRATION.

The preparation for injection was a sterile solution of which 5 c.cm. were equivalent to 100 g. of fresh liver. In the first case, this was diluted to 20 c.cm. with warm sterile saline, but in subsequent cases the undiluted solution was injected directly during the course of two to two and a half minutes without any alterations in the blood pressures being recorded. Two routes have been used—intravenous and intramuscular—without any signs of reaction on the part of the patients. Intravenously, the response was practically immediate, the reticulocytes beginning to increase within 12–24 hours. Intramuscularly, the effects were not quite so rapid but were almost equally satisfactory. Both routes were painless.

Results.

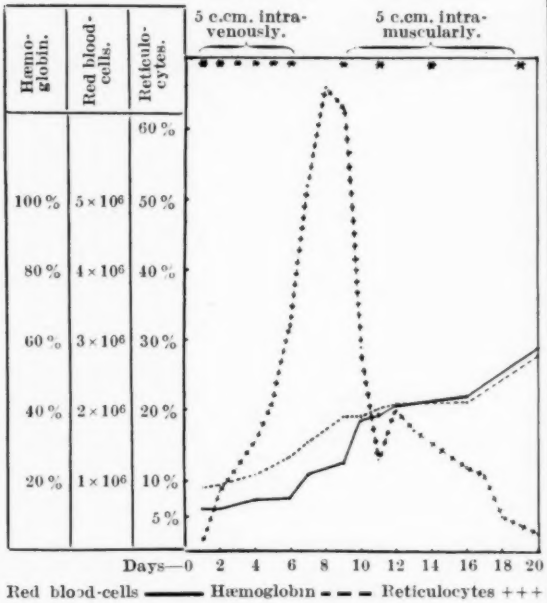
Briefly, the results can be considered under two headings: (*a*) Patients with initial red cell counts below 800,000 per c.mm. as a rule, and so desperately ill that they were considered to be in extremis. (*b*) Patients very ill with initial red cell counts usually below about one million per c.mm. and either unable to take oral therapy on admission on account

of persistent nausea and vomiting, &c., or else refused such treatment.

The following few cases are chosen to illustrate some of the results that have been obtained.

Group I.—The first three cases in this group had initial red cell counts of 800,000, 760,000, and 600,000 per c.mm. respectively; they were all extremely ill, were typical cases of pernicious anæmia, and their bloods showed strong auto-agglutination. They were given the preliminary injections intravenously, as shown in the Chart, with immediate

CASE 3.



Red blood-cells —— Hæmoglobin - - - Reticulocytes +++

The patient was discharged from hospital on the 20th day.

responses—infinitely better and quicker than are obtained in similar cases after blood transfusions. In the Chart it will be seen that the reticulocytes rose rapidly to 66 per cent. on the seventh day, while the red blood-cells and hæmoglobin increased steadily. The present blood count of this patient is: red blood-cells 5,620,000 and hæmoglobin 90 per cent. The results obtained in this case, using the diluted solution intravenously, encouraged further investigations with the severest cases who were given 5 c.cm. of the undiluted solution daily (2 c.cm. per minute) for three days, and then at varying intervals intramuscularly. The responses were remarkable and within 24 hours the patients were obviously better, while the reticulocytes had begun to increase. During the treatment no other therapy was permitted and no blood transfusions were employed.

In these three cases the reticulocytes showed excellent responses with ultimate "peaks" of 41·8, 53·1, and 66·0 per cent. on the seventh, sixth, and seventh days respectively; the red cell counts increased in Case 1 from 800,000 to 3,700,000 (21 days); Case 2 from 760,000 to 3,050,000 (20 days); Case 3 from 600,000 to 3,250,000 (23 days). The cases are now attending at regular intervals as out-patients and receiving periodical injections.

Another case, with an initial red cell count of 1,060,000 per c.mm. and hæmoglobin 24 per cent., showed a similar response, and has been given weekly intramuscular injections of 5 c.cm. On the forty-eighth day she had a blood count of red cells 4,590,000, hæmoglobin 92 per cent., and had received the equivalent of 2 kilogrammes of fresh liver in that period. Two other cases received intramuscular injections with similar satisfactory results.

Group II.—Two cases in this group were particularly interesting and illustrate very well the value of this form of therapy in certain cases with relatively good red cell counts.

In the first case, initial red cell count 1,270,000 and hæmoglobin 42 per cent., there was persistent nausea and vomiting and it was quite impossible to give anything by mouth. After the institution of intravenous injections of 5 c.cm. daily the condition improved so much that the oral administration of hog's stomach was resumed after the blood count had increased to red cells 3,720,000, hæmoglobin 84 per cent.

In the second case, the patient, a very strong-willed woman, initial red cell count 900,000, and hæmoglobin 24 per cent., resolutely refused to take either liver or hog's stomach. She was given six daily injections of the preparation intramuscularly when desiccated hog's stomach was gradually introduced in small quantities into her food unknown to her. She was discharged from hospital with a red cell count of 4,030,000 and hæmoglobin 66 per cent.

Summary.

A method of treatment for the severest cases and also refractory cases of pernicious anæmia is indicated. This involves the use of a highly purified and extremely potent preparation from liver extract; it is practically free from protein and does not affect the blood pressure when injected intravenously or intramuscularly. Both routes are efficient, rapid, and painless, but the intravenous method is slightly quicker in its results. The method is intended to supplement the ordinary oral therapy during the critical stages of the disease. It can, however, be used as the sole treatment—intramuscular injections being readily given at regular intervals according to the needs of the patient.

My thanks are due to those honorary physicians of the Manchester Royal Infirmary who placed their cases at my disposal, to Dr. R. Ellis for his assistance with some of them, and to the assistant clinical pathologists for carrying out the blood determinations. Acknowledgment is also made to Evans' Biological Institute, Runcorn, for kindly preparing for me the unlimited supplies of a highly potent and purified solution, which they now have available as Hepatex P.A.F.

REFERENCES.

1. Castle, W. B., and Taylor, F. H. L.: THE LANCET, 1931, i., 857.
2. Cohn, E. J., Minot, G. R., Alles, G. A., and Salter, W. T.: Jour. Biol. Chem., 1928, lxxvii., 325.
3. Don, C. S.: Brit. Med. Jour., 1930, ii., 280.
4. Gänsslen, M.: Klin. Woch., 1930, ix., 2099.
5. Wilkinson, J. F.: Brit. Med. Jour., 1930, i., 236; 1931, i., 85; Proc. Roy. Soc. Med., 1931, xxiv., 948.

VISITORS TO HOSPITALS.—The visiting hours at the Middlesex Hospital have been rearranged to enable visitors to see their friends in the evening. Hitherto the hours have been from 4 P.M. to 5 P.M. on Tuesdays and Fridays and from 2 P.M. to 4 P.M. on Sundays. In future visitors will be admitted from 6 P.M. to 7 P.M. on Tuesdays, the other days remaining unaltered. The change has been made to meet the complaints of working-class visitors that they are unable to leave their employment in the afternoon.—At Worcester Infirmary it is complained that visitors attend in such numbers that the wards are turned into "nothing but a fair," often to the serious hurt of the patients.

CLINICAL AND LABORATORY NOTES

REMOVAL OF A URETERIC STONE BY TRANSCYSTOSCOPIC MANIPULATION.

By H. P. WINSBURY-WHITE, F.R.C.S. Eng.,

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THE great majority of ureteral stones which become impacted in the ureter come to rest in the pelvic portion just outside the bladder wall. When it is certain from the length of the history, repeated observation by radiogram, or by noting the actual size of the stone, that further unaided progress is impossible, then measures to dislodge the stone through the cystoscope should be carefully considered before open operation is advised. The immediate objective of these manipulations is to make the lumen of the remaining portion of the ureter wide enough for the stone to traverse.

Various kinds of ureteral dilators are made for this purpose. The safest and often the best means, however, is to pass one or more ureteric catheters beyond the stone and to leave them in position for several hours. It is often advisable, if the stone is large, to increase the orifice of the ureter by slitting with transcystoscopic scissors. Sometimes it seems impossible to negotiate the catheter beyond the calculus, so firmly is the latter gripped by the ureter. In these circumstances, with the patient tilted head-down, about 3 c.cm. of 2 per cent. procaine are slowly injected through the catheter. After five or ten minutes it should be possible to work the catheter past the obstruction. A second catheter can frequently be manœuvred into position. A few c.cm. of sterilised liquid paraffin are then injected to lubricate the passage of the stone, and the patient is sent back to bed with the catheters undisturbed.

The orifice should be slit before the catheters are passed; this procedure has the doubly advantageous effect of enlarging the exit and causing relaxation of the wall of the ureter immediately above.

FIG. 3.

Cystoscopic view of the transcystoscopic scissors about to divide the ureteric orifice, into which one blade of the instrument has been inserted.

The accompanying illustrations concern an instructive case, sent to me by Dr. P. P. Dalton, which shows the value of these procedures.

The patient was a female aged 45, who complained of pain in the right side of the abdomen over a period of 11 years and some frequency of micturition. There had been a number of sudden attacks of acute pain starting in the right loin, passing into the groin and thigh, and accompanied by vomiting. There was a continuous pain above the right inguinal ligament.

The patient had had several examinations under anæsthesia in other hospitals, but had never been radiographed. On abdominal examination tenderness on deep pressure both in the right renal region and in the lower abdomen on the right side was noted. The urine contained three or four leucocytes and a few red blood-cells per field. Cystoscopy showed some cystitis localised to the trigone and internal urinary meatus. Indigo-carmine injected intravenously appeared from each ureteric orifice in five minutes, in fair concentration, indicating good renal function on both sides. A radiogram showed a shadow in the line of the pelvic portion of the right ureter, consistent with that of a stone.

FIG. 1. FIG. 2.

Radiogram showing a stone in the ureter in relation to a ureteric catheter.

Pyelo-ureterogram and cystogram showing that the ureteric calculus lies just outside the bladder.

An opaque catheter was passed up the right ureter, met with only a temporary obstruction on the pelvic floor, and then passed on. A further radiogram taken with the catheter in position made it clear that the shadow in question was a stone in the ureter (Fig. 1). The injection of opaque medium up the catheter (Fig. 2) demonstrated that there was only a mild degree of dilatation of the kidney and ureter from back pressure. It was also noted that there was a slight redundancy of the ureter near its upper end, where it was seen to be looped. The relationship of the shadow of the opaque medium in the bladder to that of the stone in the ureter made it clear that the calculus was

only separated from the vesical cavity by the thickness of the bladder wall.

A few days after the examination was concluded the patient was given a general anæsthetic, and in the lithotomy position an operating cystoscope was passed. Through this instrument the cystoscopic scissors were introduced, and the right ureteric orifice was incised for a distance of half an inch. Fig. 3 represents a cystoscopic view of the blades as they were about to slit the orifice (the drawing was made from this case while the operation was in progress). Two ureteric catheters (No. 5 Charrière) were then passed up the ureter well beyond the stone, and 5 c.cm. of sterilised liquid paraffin were injected into the renal pelvis. The patient was sent back to bed and the catheters were left in position for six hours. She complained of some renal pain and tenderness and had pyrexia for several days. A radiogram at the end of this time showed the stone in the bladder. The patient was given another anæsthetic, and the stone was crushed with a lithotrite and the fragments removed with the Bigelow's evacuator; she made a good recovery. The method of treatment followed in this case forms a favourable contrast with the alternative of open operation.

APPENDICITIS IN CHILDHOOD.

By D. J. Cannon, M.B., M.A.O. N.U.I.,
VISITING SURGEON TO THE CHILDREN'S HOSPITAL, TEMPLE-STREET, DUBLIN.

Since 1921 I have operated upon 89 cases of acute appendicitis in children. Of the seven which proved fatal, four were advanced cases or showed generalised peritonitis on admission. If we exclude these neglected cases the mortality-rate of the series is about 3·4 per cent.

The death-rate from appendicitis in children, especially in hospital practice, is higher than in adults, and it seems to me that this is because more mistakes are made in the diagnosis and treatment.

DIAGNOSIS.

Prof. D. P. D. Wilkie [1] has lately drawn attention to the important points of differential diagnosis between acute obstructive and non-obstructive appendicitis. In both the pain is always central, at any rate, at the beginning of the attack, but in obstructive cases it is definitely colicky. The most important point, however, is that in the obstructive cases signs of localised or appendix peritonitis may be entirely absent. In my opinion it is the absence of pain and tenderness in the right iliac fossa in such cases that is responsible for inaccurate diagnosis and delayed treatment.

The child tells the mother that it has a pain. The mother promptly administers castor oil, which causes the inflamed appendix to rupture and to discharge its contents through the peritoneal cavity before Nature has had time to throw out its natural defences. And even the physician appears to regard colicky abdominal pains as a natural phenomenon. "It is true," says L. E. Barrington-Ward "that colicky pains may denote some mild peristaltic unrest of a simple nature due to a simple cause, but, on the other hand, they may be the first signs of an imminent abdominal catastrophe." In my opinion colicky abdominal pains, especially when associated with an increased pulse-rate, whether or not the temperature is raised, should be regarded with the gravest suspicion.

[1] Brit. Med. Jour., 1931, i., 253.

If a child complains of abdominal pain and dysuria, pelvic appendicitis should be suspected and a careful rectal as well as abdominal examination should be made.

I am convinced that in children chronic dyspepsia, sometimes associated with intestinal colic and even nausea and vomiting, may be due to kinks of the appendix. These kinks are not inflammatory, and it would be more accurate, therefore, to call these cases chronic appendicular disease than chronic appendicitis. Apart from the inconvenience of the symptoms this condition may sometimes lead to acute obstructive appendicitis. I have demonstrated these kinks on several occasions, and the removal of the appendix has been almost always followed by disappearance of the dyspeptic symptoms.

TREATMENT.

In the acute appendicitis of adults many surgeons defer operation if the case is not seen until three or four days after the attack. It is entirely different with children. It is impossible to forecast what is going to happen when there is infection in the peritoneal cavity. The child's resistance to infection is weaker. If, however, at the time of examination the attack is definitely subsiding, then perhaps it is well to defer operation; and if there is a dense localised abscess it is wise to drain the abscess and leave the removal of the appendix to a later date.

In simple cases fluids may be given by the mouth for the first 48 hours. On the third day semi-solids are administered. Strong purgatives are contra-indicated. If there is localised or appendix peritonitis the child should be put into the Fowler position at once and glucose saline should be administered by the rectum. Morphine may be given provided that nothing has been administered by the mouth.

THE PATHOLOGY OF GLANDULAR FEVER.

By C. L. G. Pratt, M.D. Liverp.,
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In spite of experimental investigation the ætiology and nature of glandular fever remain obscure. That it is an acute infective process there seems to be no doubt; its mode of onset, its clinical course, the tendency for the Wassermann reaction to be temporarily positive, and its occurrence in epidemic form all point in this direction. Since the condition is usually not alarming, rarely prolonged beyond three weeks, and never fatal, but little is known of the morbid histology. It is of interest, therefore, to place on record the following observations.

Origin of Material.—In March, 1930, I was the subject of an acute febrile attack which, though at first suggesting lymphadenoma with a typhoid type of onset, was ultimately correctly diagnosed as glandular fever. Before the diagnosis was established a gland was removed for section from the posterior triangle of the neck. Constitutional recovery was complete, uneventful, and maintained. The blood picture returned to normal in about two months. The enlarged glands, however, subsided only slowly, several still being palpable one year after the acute attack. As doctor and patient were here one and the same person, no difficulty was experienced in persuading him to submit to a second operation in order to ascertain what changes, if any, had occurred in the gland structure during the interval. Accordingly, a second gland was removed, from approximately the same site, in April, 1931.

Appearances.—The first gland removed was enlarged, firm, elastic, and pinkish-white on cross-section. Microscopically there was marked active hyperæmia and much serous exudate within the glandular tissue. Early degenerative changes were observable in some of the blood-vessel walls. There were numerous hæmorrhages and several small arteries showed intravascular clotting. The arresting feature was the very considerable hyperplasia of the reticulo-endothelial cells. Though the proliferation was general, many areas showed such intense overgrowth as almost entirely to exclude lymphoid elements, thus producing "reticulo-endothelial foci" or nodules. These foci

Reticulo-endothelial hyperplasia and degeneration. Note focal necrosis.

showed central necrosis and in common with the rest of the reticulo-endothelial cells, cloudy swelling. No tubercle or other micro-organisms were detected and no giant-celled systems could be seen.

The gland removed a year later was also enlarged, though not so much as the first. There was still present a good deal of congestion, serous exudate, and old hæmorrhage. Much cellular degeneration was obvious, the germ-centres in some places being particularly involved. The enlargement, as in the first instance, was due to the hyperplasia of the reticulo-endothelial elements. A fair amount of fibrosis, however, was now present.

The appearances described correspond fairly closely to those observed by J. O. W. Bland [1] in the production of experimental glandular fever in rabbits by the inoculation of blood from a human case. The histological picture seems to indicate a toxæmia, possibly due to infection with a filtrable virus, where the main response is called forth from the reticulo-endothelial system, and where the damage is particularly shown in the walls of small blood-vessels.

I am indebted to Mr. W. R. Williams, who removed the glands; to Dr. R. Howard Mole, who reported on the sections; and to Dr. Alan Curtis, who took the microphotographs. I wish to express to them my thanks.

[1] THE LANCET, 1930, ii., 521.

BRITISH ASSOCIATION.

CENTENARY MEETING IN LONDON.

(*Concluded from p. 762.*)

A MEETING of the Section of Physiology on Sept. 29th, with Dr. H. H. DALE, the President, in the chair, was devoted to a discussion on the

Problems of Asphyxia.

The four main available lines of resuscitation were described—namely, artificial respiration, carbon dioxide and oxygen inhalation, cardiac puncture, and cardiac massage. Their application in carbon monoxide poisoning, anæsthesia, and asphyxia neonatorum was reviewed.

METHODS OF RESUSCITATION.

Sir EDWARD SHARPEY SCHAFER said that any method of resuscitation involving apparatus is virtually useless as it is rarely at hand when required. Reliance has therefore mostly to be placed on artificial respiration. This was first advocated, in 1856, by Marshall Hall, who laid the body upon its face, rolled it on to one side to cause inspiration, and then back again for expiration. In the following year Sylvester put forward what he considered a more physiological treatment. In this the body is laid upon its back, the arms are raised above the head to bring about inspiratory movement of the ribs, and lastly the arms are flexed and compressed against the ribs to expel the air. This has little effect, said Sir Edward, for it raises the ribs only, whereas the diaphragm is the chief agent of respiration; in natural, quiet breathing the diaphragm acts almost alone, movement of the ribs being called in only when breathing is forced. A further disadvantage of Sylvester's method is that an assistant is required to keep the body steady. Then came Howard's method which was originally intended to be carried out by pressure on the lower ribs, the body lying on its back, but pressure on the epigastrium was soon found to be more effective.

As none of these systems would give adequate alteration of the chest capacity, a Royal Commission was set up at the close of the last century to evolve an efficient method of resuscitation. Experiments were carried out on living persons who were holding their breath without closing the glottis; from this came the idea of first squeezing out the air from the chest and then allowing expansion to occur from the elasticity of the parts. This was done by pressing on the small of the back, thus compressing the abdominal viscera and pushing the diaphragm upwards. This, the prone pressure or "Schafer's method," as it is now called, was found to be efficient. It is better than Howard's in that the prone position allows mucus, and water in cases of drowning, to run from the mouth; in Howard's dorsal position the tongue is apt to fall back, obstructing respiration, with a resultant noise of snoring. The speaker mentioned incidentally that snoring is due to the falling back of the tongue during natural sleep and that every snorer can cure himself by lying on his side.

The efficiency of these four methods of resuscitation was tested by measuring the air exchange per respiration. This brought out the superiority of the prone pressure method, which can surpass quiet breathing. The other three were again shown to be quite inadequate. The prone pressure method has also the advantage of being so easy to perform that it can well be kept up for an hour and be carried out by a

child. It is essentially physiological, since the expiration stimulates the respiratory centre to start inspiration.

Possible injury to some organ during manipulations is one of the dangers of artificial respiration. The risk is greatest in Howard's method which has resulted in many deaths from ruptured liver. Sir Edward maintains that this risk is obviated by the prone pressure method, and he advocates the use of a pressure of 60 lb. weight. Dr. Drinker, however, has found that an operator who is heavy may exert a far greater pressure, often over 120 lb., and he has met with some cases where damage has been done as, for instance, in motor accidents, where ribs have previously been broken.

Sir Edward put forward a plea for a more extensive teaching of the prone pressure method. It is taught at present in the Army, the Navy, the police, and to boy scouts and girl guides. He suggested that it might well be part of the physical drill in every school. It should certainly be part of the training of the medical student; many lives doubtless have been lost owing to medical ignorance of the right method of artificial respiration.

USES OF CARBON DIOXIDE.

Prof. YANDELL HENDERSON described the evolution of the method of carbon dioxide inhalation, which, he said, has two chief uses—namely, as a stimulant to respiration in asphyxia and as a preventive and a treatment of secondary pneumonia. Twenty-five years ago Haldane, Priestley, and Douglas began their work on the part played by carbon dioxide in respiration. By induction from their results and from his own observations Prof. Henderson conceived the idea of the clinical use of carbon dioxide and oxygen inhalation. When a new physiological principle has been discovered and its practical importance recognised, it is, he said, often an extremely difficult problem, requiring time, money, and patience to work out its effective clinical application. The practical problem of administering carbon dioxide is not simple. For this reason it was only ten years ago that the method was introduced into the practical fields of resuscitation, when it was taken up by the gas rescue crews in New York. In the United States the carbon monoxide content of coal gas is much higher than in England, with the result that gas asphyxia is commoner. In New York alone there are nine corps of highly trained men who have had to answer 1600–1900 calls a year to attend to gas leaks. This has given an opportunity, which Dr. Drinker has taken, of studying extensively the problem of resuscitation of carbon monoxide poisoning. At Prof. Henderson's instigation oxygen alone was tried at first, and proved to be useless where respiration is greatly depressed or has stopped. Carbon dioxide inhalation gave better results; a mixture of oxygen with carbon dioxide proved to be far the most effective. It was also noted that after using carbon dioxide neither pneumonia nor subsequent nervous symptoms developed.

Sir FRANCIS SHIPWAY, speaking on the value of carbon dioxide in preventing hiccup, post-operative collapse of the lung, and pneumonia, referred to the danger of using it to excess. It is the custom of some anæsthetists, he said, to maintain 5 or 6 per cent. carbon dioxide inhalation throughout an operation. This over-stimulation is liable to cause fatigue of the respiratory centre and may lead to complications. Death from asphyxia during apnœa does not seem a likely occurrence.

Dr. C. K. DRINKER, from his experience in coöperation with the emergency crews of the New York Consolidated Gas Company, recommended that in practice the prone pressure method should be used where natural breathing is occurring only feebly as there is much to be gained by making the period of asphyxia as short as possible. While the prone pressure method is being applied, and subsequently, oxygen together with 7 per cent. carbon dioxide should be given. This proportion has been chosen in preference to 5 per cent. because some people respond with much less vigour than others. Since the adoption of 7 per cent. carbon dioxide there has been a considerable reduction in the mortality. This fact is leading Dr. Drinker to try 10 per cent. carbon dioxide during the coming winter.

Prof. J. S. HALDANE said that in mines there is the difficulty of carrying cylinders about; compressed oxygen is, in this respect, more awkward to use than carbon dioxide, which can be transported in liquid form. In this country, he said, public opinion demands that oxygen should be used, although probably it is often quite unnecessary even to use oxygen with carbon dioxide. Carbon dioxide is an immediate antidote to carbon monoxide poisoning, since it relieves the symptoms before the gradual replacement of carbon monoxide by oxygen has taken place. There is probably a double action; the increased ventilation raises the oxygen tension in the alveolar air and the carbon dioxide stimulates the circulation; this latter has probably the greater immediate effect.

RESUSCITATION DURING ANÆSTHESIA.

Sir FRANCIS SHIPWAY said that while the prone pressure method of artificial respiration is undoubtedly preferable to Sylvester's method, it is not often applicable during anæsthesia. Most operations are performed in the dorsal position, with the result that the delay caused by changing the position and the loss of asepsis would weigh too heavily against the case. The prone pressure method is very usefully applied to cases where a foreign body or blood has been inhaled. Probably Howard's method is the most serviceable to an anæsthetist.

In cases where the heart has ceased to beat there is a choice of three methods of resuscitation—the intracardiac injection of a drug, puncture of an auricle or ventricle, and cardiac massage. In these emergencies time is all-important, for it is thought that the cells of the central nervous system will not survive more than a brief period, which is probably from 5–7 minutes. In one case, recently reported, where the patient revived after 13 minutes, the subsequent history showed some cerebral irritation a few weeks later, and on recovery the patient was backward at school for two years. Hymans has recently published a paper in which he reports the recovery of cases after 20 or even 30 minutes after the heart has stopped beating, but this raises the difficulty of determining whether the heart's action has really ceased. It is impossible in these moments of acute distress to make observations with the stoical calm of a physiologist viewing a dead rabbit.

Discussing the choice of procedure, Sir Francis said that the subdiaphragmatic route to the heart is useful if the abdomen is open, but in this way the apex alone is reached. Incision of the diaphragm then allows more effective massage to be performed. It has been suggested that the optimum rate of compressions is 70 a minute with intermissions of 15–20 seconds to allow the heart to recover. Massage, however, is being superseded by injection of adrenalin or pituitrin, and recently Hymans has shown that stimulation of the heart by pricking with a needle

is sufficient. He suggests that this should be done to the auricle rather than to the ventricle for fear that fibrillation may follow. The proper procedure, Sir Francis considered, is to perform subdiaphragmatic massage if the abdomen is open, or if that fails, puncture of the auricle through the third intercostal space. He feared that the intracardiac injection of adrenalin might damage the myocardium.

Prof. J. A. GUNN and Sir EDWARD SHARPEY SCHAFER reported experiments on animals showing the effectiveness of adrenalin in resuscitation; they did not consider damage to the myocardium to be a likely sequel.

NERVOUS SEQUELS OF ASPHYXIA.

Dr. DRINKER stated that permanent damage to the central nervous system is uncommon after carbon monoxide poisoning. It might be thought that with such a large number of cases there would be in New York a great group of persons displaying all sorts of nervous symptoms referable to nerve-cell destruction through oxygen lack. Such is not the case. The patients either died or got as well as they were before the toxic episode. In seeking information upon the outcome of serious poisoning, the records of 518 patients admitted to Bellevue Hospital have been reviewed. Of this number 124 died in hospital, 118 were transferred to the psychiatric division, and except two, one of whom died of tuberculosis and the other of myocarditis, all were eventually discharged. Fifty-two were mentally depressed when discharged but exhibited no other symptoms. Two patients alone showed symptoms definitely referable to their poisoning. One of these had a rather complete loss of memory and periodical tremulous shaking of the head. The second developed parkinsonian symptoms and was believed to have lesions of the basal ganglia. It is, of course, possible that some degree of loss of memory and change of disposition may have been present in more of these patients, but it is certain that almost none of this large group of patients survived acute poisoning to endure serious neurological sequelæ.

Sir BERNARD SPILSBURY reported two cases in which he had conducted post-mortem examination. The subjects had died after the circulation had been restored for some time by means of cardiac massage undertaken when the heart had stopped for a considerable period. One of the patients, a child of 3½ years, had been operated on for rectal polypi. Seven minutes after the cessation of administration of the anæsthetic the patient stopped breathing and death followed seven hours later. Macro- and microscopical examination at the autopsy revealed changes closely resembling those found in acute encephalitis. Sir Bernard expressed the opinion that the artificial revival of the circulation after stoppage for more than seven to eight minutes could produce no permanent recovery.

NEONATAL ASPHYXIA.

Prof. HENDERSON said he thought carbon dioxide inhalation has a particular application to neonatal asphyxia where the threshold of the respiratory centre may be depressed by the drugs given to the mother. A second purpose is also served by removing atelectasis which, owing to consequent pneumonia, is probably the cause of many neonatal deaths.

Sir EDWARD SHARPEY SCHAFER said that pressure is useless as the difficulty in these cases is due to the fact that the lungs are empty of air and need to be filled. This should be accomplished, if possible, by inducing natural respiration by stimulation of the skin. Failing this, inflation can be effected through a cannula passed into the trachea. Mouth-to-mouth inflation is difficult, since air driven into the mouth is apt to pass into the œsophagus and distend the stomach. He considered that in cases of asphyxia neonatorum adrenalin should always be injected into the heart.

Sir FRANCIS SHIPWAY suggested that as many cases of neonatal asphyxia are due to the drugs administered to the mother, if an anæsthetic comes to be used at every confinement there will be more dead babies.

Prof. GUNN described a method of resuscitation of the new-born child by holding the child by the trunk between the hands, and then placing the child alternately in the dorsal and ventral positions. This, he recommended, should be followed by hot and cold water stimulation to the skin.

Sir EDWARD SHARPEY SCHAFER summed up briefly saying that we have much to learn from American methods. The all-important factor in resuscitation is time.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING IN EASTBOURNE.

SECTION OF DERMATOLOGY.

AT the first meeting of this section, the President, Dr. HENRY MACCORMAC, being in the chair, a discussion on

Pruritus Ani

was opened by Colonel W. P. MACARTHUR, who limited himself to pruritus in adults caused by *Enterobius vermicularis*. This worm, he said, took two weeks to complete its cycle; the ingested ova hatched in the duodenum, the larvæ first inhabiting the small intestine, later migrating to the cæcum where the majority of the worms existed, the appendix being a favourite habitat. Gravid females made their way to the rectum and anus to oviposit. The pruritus was caused by their wriggling movements. There was no multiplication of parasites within the body, and auto-infection by the mouth was the rule. Pruritus was the most constant symptom, and was mainly nocturnal, commencing after the patient went to bed. The itching was intensified by heat, and relieved by cold, and ceased some time before morning. Some itching might be experienced during the day, after exercise, or when in close proximity to a fire, especially in the evening, but was never so severe as that felt at night. The discomfort and loss of sleep thus caused led to mental irritability and despondency, aggravated by the fact that the sufferer often concealed his infirmity.

Various reflex phenomena might develop, such as gastric hyperacidity, indigestion (probably due to intestinal catarrh), and frequency of micturition—symptoms which might mislead. Enterobiasis occasionally caused attacks of appendicular colic leading to the removal of the appendix, which was then found to contain worms. Appendicectomy should not be undertaken as a curative measure, for persons who had previously undergone this operation were just as liable to infection as others and were no easier to cure. The activities of the parasite within the appendix, and the resulting damage to the mucous membrane, might lead to the development of acute appendicitis. Owing to lacerations and abrasions of the anal region, perianal eczema might be set up, but on the other hand there might be surprisingly little local injury. Nasal itching might be present.

Enterobiasis should be considered as a possible

cause in every case of nocturnal pruritus ani. The most thorough diagnostic measure was a rectal wash-out, administered when the pruritus was active; three or four ounces of saline was all that was required, the rectum having been previously emptied. The fluid which was returned into a suitable receptacle must be examined for worms, care being taken that shreds of mucus were not mistaken for them. Ova were more likely to be found in scrapings from the perianal region, or in rectal mucus, than in the examination of the fæces.

In the treatment the prevention of auto-infection was most important. The hands must be washed every time the surface of the body or an undergarment was touched. Laxness in this respect would be followed by vexatious reinfection. Treatment proper consisted in the removal of the adult female worms by lavage, and the destruction of the developing stages in the cæcum and appendix. For the first, 4 oz. of salt and water, two tablespoonsful to the pint, was best, and should be administered by the patient himself with a 2-oz. enema bulb, the treatment being useless if given when the pruritus was not felt. The second part of the treatment was the administration of anthelmintic drugs in the hope of destroying the parasites before they migrate into the rectum. As the rectal wash-out gave instant relief, the patient as a rule preferred not to be inconvenienced by purgative drugs, though these undoubtedly shortened the treatment. Two grains of santonin with half a grain of calomel were helpful.

DISCUSSION.

Mr. W. B. GABRIEL (London), after emphasising the need for thorough examination of the rectum, including proctoscopy and sigmoidoscopy, described a classification of the cases where pruritus was a symptom, and in which treatment was directed towards the exciting cause. It might be due to (1) lack of cleanliness; (2) excessive sweating; (3) leakage of mucus, due to such conditions as prolapsed piles, rectal prolapse, proctitis, &c.; (4) carcinoma of the rectum; (5) excessive intake of liquid paraffin; (6) threadworms; (7) finally in a small percentage of cases no obvious cause was found. In the treatment of "idiopathic," the symptom having gained the importance of a disease, subcutaneous injection of A.B.A. in large doses gave relief, and he reported 66 cases thus treated in only three of which there was complete failure.

Dr. HERBERT BROWN (Glasgow) said to get a true conception of the subject it was necessary to include pruritus localised to any part of the ano-genital area, for pruritus of the vulva, perineum, or scrotum often accompanied, preceded, or followed pruritus ani, and might be due to the same cause. He emphasised the careful interrogation of the patient as to the exact localisation of the itching, otherwise points of importance might be missed. Where the itching was confined to small areas close to the anus, on the perineum, or on the vulva, A.B.A. injections were particularly useful. Other diseases of the skin must not be overlooked—e.g., ringworm infection due to the epidermophyton, eczema, more especially of seborrhœic type, psoriasis, lichen planus, and lichen simplex chronicus. The last-named was, in his experience, the most important, and was the cause in 18 per cent. of his cases of ano-genital pruritus. Threadworms he thought were not a common cause in adults, but he admitted, after hearing what Colonel MacArthur had said, that he must have missed this causal factor in some cases. In treatment X rays should only be employed after careful consideration, but present-day technique enabled this method to be used with safety. Some cases were exceedingly troublesome; other speakers would, he hoped, tell him why. He thought a team examination should be done before adoption of operative measures, as major operations had been performed without relief.

Dr. G. B. DOWLING (London) said that apart from threadworms there were seven causes of pruritus ani: (1) bacterial infection in and about the anus associated with hæmorrhoids; (2) mycotic infection; (3) simple intertrigenous dermatitis; (4) seborrhœic dermatitis; (5) papilloma in the anal canal; (6) psoriasis; (7) psychological disturbances. He had had good results with A.B.A.

Dr. A. R. HALLAM (Sheffield) said that in many cases the initial itching was round a tag of skin. He offered a word of warning against the indiscriminate use of X rays, as over-dosage so altered the skin that the itching became worse.

Dr. AGNES SAVILL (London) suggested that the leakage of liquid paraffin was a common cause of pruritus. She emphasised the importance of cleanliness, and the protection of the anal region from fæcal irritation by the use of vaseline before defæcation. A sentinel pile was often the cause of a relapse. She recommended the use of ultra-violet light, which should not be given on the same day as X ray treatment for fear of dermatitis.

Dr. J. BEATTY (Cardiff) described itching as a sensation of capillary pulsation.

Mr. A. DICKSON WRIGHT (London) had not seen permanent improvement in cases treated with A.B.A. He had treated cases by dividing the nerves supplying the pudendal area, the incision being made midway between the anus and the ischial tuberosity. The results were good, and no paralysis of the sphincter ani followed.

Dr. J. H. ANDERSON (Ruthin) reviewed a short series of cases in which pruritus ani was a symptom; in nearly half of them there was nervous instability in a near relative.

Dr. A. C. ROXBURGH (London) had found X ray treatment useful in clearing up dermatitis in chronic cases. He had also found alcohol injections of great value in pruritus.

Dr. J. D. ROLLESTON (London) emphasised the importance of looking for tabes as a cause of anal pruritus.

Dr. ALEXANDER HALL (Brighton) spoke of the frequent association of pruritus with congestion of the liver, and stasis round the anus.

The PRESIDENT expressed appreciation of Colonel MacArthur's work. He felt that many cases of pruritus due to thread worms must have been missed.

Onychia.

Dr. H. D. HALDIN-DAVIS (London) read a short paper on onychia as an occupational disease. It was remarkable, he said, how little had been written about onychia considering how often the nails were exposed to injury. Alteration of the nails was frequently found in workers in chemical works, in breweries, especially in those occupied in cleaning out casks. In many occupations the terminal portion of the nail was rubbed down. Inflammation of the base of the nail was common in such occupations as beer bottling, office cleaning, and domestic service. Too vigorous use of the orange stick was also a possible cause.

Dr. ROLLESTON said that diphtheria should be thought of as a cause of onychia in hospital residents and nurses.

Dr. TWISTON DAVIES (Brighton) had tried dipping the tips of the fingers in collodion before washing, as a preventive, but without success. He considered that the clinical behaviour of chronic onychia was inconsistent with its being mainly due to mechanical causes. Individual nails recovered, and relapsed, apparently spontaneously whether or no the mechanical cause was removed.

Dr. H. C. SEMON (London) asked if any of Dr. Rolleston's cases of diphtheritic onychia had developed paralysis. He supported Dr. Haldin-Davis's view of the importance of maceration by water, soap, and soda solutions as the primary cause of most cases of onychia in hospital practice, where it was far more common than in private. The use of rubber gloves, in his experience, increased the chances of cure, which was also assisted by the daily application of pure monsol to the nail folds.

Dysidrosis.

Dr. DOWLING read a paper on the ætiology of dysidrosis, which was commonly thought to be due to retention of sweat by the follicles of the skin. He described the characteristic feature of the disease; the small vesicles, like boiled sago grains, which later run together and form bullæ. The hands were always affected, and the feet almost always. Ringworm was present in a large number of cases, microscopic examination of scrapings of the sodden tissue between the toes showing the characteristic mycelia. The thrush fungus was also capable of causing the same condition. The disease was due to an exogenous irritant. Seborrhœic eczema might also be found on the scalp. The condition was thus shown to be a vesicular eczema. In cases where there was no obvious cause the sweat itself might be the irritant.

The PRESIDENT doubted if an infection of the feet could cause the condition on the hands.

Dr. ROXBURGH agreed with Dr. Dowling; he had found that, if the lesion on the feet was cured, the lesion on the hands cleared up.

Dr. TWISTON DAVIES said he had not found any association of epidermophytosis of the feet with dysidrosis.

Dr. SEMON said that in his experience the association of the two was rare. He thought that a discussion on this subject was not complete without a reference to Benedek's interesting work and theories.

Lichen Planus.

Dr. I. H. MCCAW (Belfast) read a paper on the treatment of lichen planus by applying X rays to the cervical and lumbar enlargements of the spinal cord, first reported from France in 1924 by Pautrier and Hufschmit. Since then many French authorities had reported good results. One method consisted of applying filtered X rays to the whole of the spinal cord from the first dorsal to the fifth lumbar segments; the other of giving unfiltered X rays to the interscapular and lower dorso-lumbar regions only. In his own cases he had given two mid-line exposures with the rays directed vertically, one interscapular at about the level of the second dorsal vertebra, and the other dorso-lumbar at the level of the second lumbar segment, the dosage being half an erythema dose filtered through 0·5 mm. aluminium. Five cases of acute lichen planus were relieved of itching within a few weeks, the rash disappearing rapidly afterwards; one case of lichen verrucosus was uninfluenced; in one case of typical lichen planus, without itching, the rash was uninfluenced by two X ray treatments.

In the discussion which followed Dr. HERBERT BROWN, Dr. HALDIN-DAVIS, the PRESIDENT, and Dr. ROXBURGH took part.

SECTION OF PUBLIC HEALTH.

THE final session, Sir GEORGE BUCHANAN being in the chair, opened with a discussion on the problem of the child in the tuberculous household, introduced by Dr. R. C. WINGFIELD and Dr. F. R. G. HEAF.

Dr. J. A. GLOVER then opened a discussion upon

Acute Tonsillitis

and some of its sequels, reading a paper by Dr. F. Griffith and himself on the bacteriological and epidemiological aspects. The paper, illustrated by many diagrams, was mainly concerned with outbreaks of tonsillitis, conveyed by droplet infection in well-to-do boarding schools, some of these outbreaks investigated for the Ministry of Health, and others for the Medical Research Council. The authors emphasised the close epidemiological and bacteriological resemblance between epidemics of tonsillitis and those of scarlet fever, both being due to infection with hæmolytic streptococci of the *pyogenes* group. When this infection has taken place the subsequent course is dependent on the pathogenic qualities of the infecting strain, the state of immunity of the individual attacked, and the dosage, the latter probably proportional to the level of infection in the community as shown by the carrier-rate, and to conditions, such as overcrowding, which favour rapid transmission.

Infection of the throat with hæmolytic streptococci produces varying clinical pictures in different persons. These include: first, a symptomless infection, or healthy carrier state; secondly, tonsillitis; thirdly, febricula, feverish catarrh or pharyngitis, without noticeable sore-throat; fourthly, scarlet fever. Although many serological types of hæmolytic streptococci may cause scarlet fever, certain types are specially equipped to set up the complete scarlatinal syndrome. The work of Allison, Griffith, and Gunn had shown that in London four types known as types 1, 2, 3, and 4 (Griffith's) are together responsible for 70 per cent. of the cases of scarlet fever admitted to fever hospitals, the remaining 30 per cent. being caused by strains forming a group of heterogeneous types. Epidemic tonsillitis without rash is generally attributable to strains belonging to the heterogeneous group, but these strains cause scarlatina when their toxigenic powers are sufficiently high to overcome the antitoxic immunity of the person attacked. On the other hand, however, observations on certain school outbreaks of tonsillitis attended with severe complications, but without typical scarlatinal rashes, suggest that the two chief types concerned, types 1 and 2, may not invariably be of high toxigenicity. Many bed charts of dormitories were given showing that in epidemics of scarlet fever cases of tonsillitis and mild pharyngitis occur side by side with the cases of scarlet fever, and, if bacteriological examination be made, numbers of healthy carriers will also be detected, all yielding the same type of hæmolytic streptococcus as the scarlatinal cases. These unsuspected sources of infection constitute one of the most difficult problems in the control of scarlet fever.

Epidemics of tonsillitis or the occurrence of "dropping" cases of scarlet fever, and perhaps of otitis media, in schools are generally associated with

a high carrier-rate of hæmolytic streptococci. Measles and influenza, even in good hygienic conditions, increase the spread of hæmolytic streptococci, which are the chief causes of serious complications in these diseases, but epidemics of tonsillitis and high carrier-rates of hæmolytic streptococci are often signs of the existence of environmental conditions which favour a rapid and easy transmission of infection, conditions such as crowding of beds, deficient floor area, and deficient ventilation in dormitories. Adequate spacing and ventilation of dormitories and class rooms, and proper intervals of three feet between beds in dormitories, are therefore important factors in the prevention of the spread of hæmolytic streptococcal infection in schools.

There is, the authors concluded, a close epidemiological similarity between otitis media and scarlet fever, since the highest incidence of both diseases coincides with the peak of the wave of tonsillitis. The attack-rate of otitis media for boys is considerably higher than for girls. By far the greatest incidence was in the winter terms, in which there was no swimming. Previous tonsillectomy was without influence on the incidence of otitis media. A well-marked relationship exists between epidemics of tonsillitis and epidemics of acute rheumatism. Acute rheumatism is comparatively rare in public schools, but two small outbreaks were illustrated. The peak of the rheumatism wave followed the peak of the tonsillitis wave after an interval or lag period of two or three weeks.

DISCUSSION.

Dr. E. H. R. HARRIES (Birmingham) confirmed Dr. Glover's observations on the high percentage of Dick-positive reactors in well-to-do boarding schools, which thus contrast with the public elementary schools, and so with the usually accepted percentages for boys and girls of corresponding ages. In fever hospitals they saw scarlet fever epidemics at a different angle, and the paper suggested new and interesting lines of investigation. He had often seen cases of scarlet fever from homes where there were cases of tonsillitis and of other diseases, such as erysipelas.

Dr. S. MONCKTON COPEMAN (London) recalled epidemics of scarlet fever in the 'eighties of last century, and reminded the section of their debt to E. E. Klein for the earliest investigations of streptococcal throat infections.

Dr. R. A. GLEGG (Lewes), speaking of the sequelæ seen in the Brighton-Hove epidemic, said that adenitis, erysipelas, otitis media, and acute rheumatism were the principal.

Dr. TERTIUS CLARK referred to the curious absence of scarlet fever in Malaya. When the disease is imported it does not spread and, although the young population is Dick-positive in the usual proportions, it becomes Dick-negative with age, as is seen in countries where scarlet fever is common.

Dr. R. H. WILSHAW (Worthing), Dr. LAWSON, and Dr. W. H. BRADLEY (Stratton-on-the-Fosse) also spoke.

REVIEWS AND NOTICES OF BOOKS

Detachment of the Retina.

A Contribution to the Study of its Causation and Treatment. By J. RINGLAND ANDERSON, *M.C.*, F.R.C.S. Edin., Ophthalmic Surgeon to the Alfred Hospital, Melbourne. With a foreword by Sir JOHN HERBERT PARSONS, F.R.S. Published for the *British Journal of Ophthalmology* by the Cambridge University Press. 1931. Pp. 207. 20*s*.

UNTIL a few years ago it was generally believed that the existence of a hole in a detached retina was fatal to any prospect of cure. Prof. Jules Gonin, of Lausanne, has taught us that in most cases the only rational prospect of a cure is, in the first place, the detection of a hole by means of the ophthalmoscope; in the second place, its accurate localisation; and in the third place, its obliteration by means of the operation known as ignipuncture. The wide acceptance of his teaching marks a change from what may be called the era of præ-Gonin pessimism to that—not of actual optimism, but of a more hopeful outlook; not that there have not been optimists on the subject before Gonin, but whereas Deutschmann, who claimed a large proportion of successes for his own treatment, made few, if any, disciples, Gonin's methods are now being widely followed both in his own country and in others. Mr. Anderson's book is a painstaking summary of nearly all that has been published on the subject during recent years. The tables of references, at the end of each chapter, themselves run to several pages, and add considerably to the value of the book. After two preliminary chapters, the author discusses the pathogenesis of the condition.

There are four competing theories. Early observers considered the stretching of the choroid and sclera which takes place in myopia to be the actual cause of the retinal separation. On the other hand, numbers of patients with detachment of the retina are not myopic, while it is the exception and not the rule for myopes to have a detachment; moreover, the frequency of its occurrence in myopes appears to bear but small relation to the degree of myopia, which would be otherwise were the theory of distension applicable. The second theory is that of attraction, which attributes detachment to a pull from the side of the vitreous by fibrous strands or adhesions. The third is the theory of depression, as when there is a sudden lowering of tension in the globe due to loss of vitreous. The fourth is the theory of exudation—i.e., exudation into the inter-retinal space from the choroidal vessels. Each of these theories is fully discussed with a wealth of references to original authorities. Neither of them is applicable to more than a limited number of the cases that actually occur, but with regard to the majority of cases, generally known as "spontaneous," because the mechanism by which they are caused is still not fully understood, the second theory—that of traction—finds more favour at the present time than either of the others. The common finding of tears or holes in a detached retina is a fact, and various theories have been put forward to account for their formation. Leber first postulated a liquefaction and fibrillary degeneration of the vitreous causing the formation of bands which drag on the retina and tear it where it is attached by inflammation to the choroid. Later he postulated a "præretinitis" causing adhesions between the vitreous and the internal limiting membrane of the retina. Gonin finds a chorio-retinitis to be of common occurrence in the equatorial zone, and since most tears and holes are found in this region, or in front of it, he attributes their formation to the stretching of adhesions. On the other hand, in cases of detach-

ment, visible bands in the vitreous are seldom seen. When they are gross, as in retinitis proliferans, they do not, as a rule, produce detachment. Cystoid degeneration of the retina near the ora serrata is not uncommon in myopes and in old people, but the exact mechanism by which tears are caused is not fully understood. Anyhow most, though not all, authorities now agree with Gonin that the presence of tears or holes in the retina is fundamental. In the chapter on differential diagnosis the principal subject is choroidal sarcoma, which must always be in the surgeon's mind when he finds in a patient, seen for the first time, the signs of retinal detachment.

Finally we come to the subject of treatment, and those who consult the book for practical help in this matter will perhaps be somewhat disappointed that so comparatively few pages are devoted to the discussion of the only operative treatment that gives any prospect of real help. In dealing with a case of detached retina, therefore, the first essential is to recognise the existence of a hole. This is often a tedious business, especially as a hole is not always easy to recognise even when visible. Some help will be afforded by Prof. Vogt's diagrams, 13 of which are reproduced in this book. The second essential is to localise it exactly, so that the spot on the outer side of the sclera corresponding to the hole may be accurately defined. This involves complicated measurements to be made as a preliminary to operation. An obvious criticism is that when the hole is in a part of the retina that is waving about in the vitreous chamber the accurate localisation of its position becomes impossible until the intervening fluid has been removed. Thirdly, the operation of ignipuncture is performed either with the Paquelin cautery (Gonin) or with the galvano-cautery which has been more in favour at Moorfields. The details of the operation as performed by Gonin are described, and should be collated with the slightly different method employed at Moorfields.[1] It is doubtful whether the process of cure, when effected, is actually that of obliterating the hole, as maintained by Prof. Gonin. It seems far more probable that the hole is cut off from the surrounding inter-retinal space by means of adhesions between choroid and the edges of the hole, just as in a case of iris bombé the pupil is cut off from the anterior chamber by means of a circular adhesion.[2] This would be sufficient to prevent fluid from the vitreous chamber from entering the inter-retinal space, and to ensure this some English authorities practise a somewhat wide cauterisation of the choroid without penetrating into the vitreous chamber, which may be liable to set up fresh disturbance there, and even hæmorrhage, which is the most dreaded complication of the operation.

In the final chapter of Mr. Anderson's book the question of prognosis is discussed. Gonin and Vogt claim that the percentage of cures after ignipuncture is approximately 50. At first only recent cases with duration of a few weeks were considered hopeful, but later cases of much longer duration were included, but the prognosis is naturally not so good in these cases.

Moreover, the word "cure" needs definition. It is one thing to obtain a reattachment of a detached retina; it is another to restore its function, and the longer the detachment has lasted the worse is the prospect in this respect; also the number of cases where relapse, or a fresh detachment takes place after months or even years, affects the prognosis. It is far too soon to pass a final judgment. Nevertheless, the Gonin treatment does mark a considerable advance in the treatment of detached retina, and most will agree with the author of this book when he says that the outlook is considerably brighter than it was some years ago. Sir John Parsons, in his foreword, refers to the new treatment as affording a "ray of hope" to sufferers from the disease.

[1] Doggart, J. H., and Shapland, C. D.: Brit. Jour. Ophth., May, 1931, p. 257.
[2] Fisher, J. H.: Ibid., June, 1931, p. 317.

Recent Advances in Cardiology.

Second edition. By C. F. TERENCE EAST, M.D., F.R.C.P., Junior Physician, King's College Hospital; Physician, Woolwich Memorial Hospital; and C. W. CURTIS BAIN, *M.C.*, M.B., M.R.C.P., Physician, Harrogate Infirmary. London: J. and A. Churchill. 1931. Pp. 353. 12*s.* 6*d.*

Drs. East and Bain deserve congratulation for having kept the second edition of their book substantially the same size as its predecessor, though a new and useful section dealing with the use of massage and exercises has been introduced. Various other chapters have been partially rewritten. Each chapter is an essay on some aspect of cardiology in which advances in knowledge have been made in recent years, so that the book fails to give a complete picture of the modern conception of cardiology as a whole. Though it is somewhat disjointed, it contains much useful information, in addition to a very full list of references to recent original papers on cardiology.

The fact that this book is not adapted to the needs of the medical student will make it the more valuable to advanced workers.

Ronald Ross, Discoverer and Creator.

By R. L. MEGROZ. With a preface by OSBERT SITWELL. London: George Allen and Unwin, Ltd. 1931. Pp. 282. 10*s.* 6*d.*

THIS book is a frank piece of hero-worship, so frank, we might imagine, as to be embarrassing to its subject. It is dedicated primarily "to all true hero-worshippers," and it is prefaced by a discriminating man of letters who says "it is difficult not to become dithyrambic." The book is divided into two parts: (1) biographical and scientific, and (2) literary work. The first part contains much that will be familiar to those who have read Sir Ronald's autobiography. Though many details in those comprehensive memoirs are omitted, the author acknowledges indebtedness to Sir Ronald for patient response to innumerable questions, and shows by dates that his own statements as to Sir Ronald's work before 1916 were not based upon any personal knowledge. He has not been able to add anything to records which have long been available or to help in the comprehension of old contentions. The second part of the volume consists of the author's estimates of Sir Ronald's varied literary output; of criticism there could be but little in a book avowedly written in the spirit of hero-worship. That spirit is very creditable to the author, but the wholesale surrender to it will not, we think, induce readers to buy Sir Ronald's own works—an outcome of devotion that may not have been anticipated. The book closes with a seriatim list of the high honours and rewards which Sir Ronald has received, leaving the pleasant impression that if he had many obstacles in his early path,

and if his claims have sometimes been antagonised in a manner painful to himself, he has at least not been subjected to the neglect which has been the lot of so many scientific pioneers.

Notes on Radium Therapy.

For Medical Students. By HECTOR A. COLWELL, M.B., Ph.D., M.R.C.P. Lond., D.P.H. Oxf., formerly Director of the Radiotherapeutic Department and Lecturer on Radiology and Biophysics, King's College Hospital. London: H. K. Lewis and Co., Ltd. 1931. Pp. 163. 6*s*.

Dr. Colwell's reputation as a teacher will be enhanced by this little book. He has kept consistently within the compass he has set himself, and his style is clear and readable. The book is intended for students preparing for their final examination, and for others who may wish to know something about what is being done in radium therapy. In some 160 odd pages is provided reliable information on the chemistry and physics of radium, the technical points which crop up in its therapeutic use, as well as a general review of the ways in which cancer of the various sites of the body is being treated at the present day. There is real information within these pages, and not only that, but the author's attractive style comes through it very well.

We commend the book as a modest but useful contribution to radiological literature.

An Introduction to Pharmacology and Therapeutics.

Second edition. By J. A. GUNN, M.D., D.Sc. Edin., M.A. Oxf., Professor of Pharmacology in the University of Oxford. London: Humphrey Milford, Oxford University Press. 1931. Pp. 233. 5*s*.

Prof. Gunn's admirable little book has reached a second edition within two years of its publication. It makes an appeal alike to teachers and students. After so short an interval but few alterations are required, but a new chapter has been introduced which deals with the action of drugs on the respiratory system, and provides a simple and clear account of a subject not widely understood. The book adequately fulfils the author's purpose of providing the student with a short but comprehensive survey of the main facts of pharmacology and therapeutics, and deserves to maintain its popularity.

Poisons and Poisoners.

By C. J. S. THOMPSON, M.B.E. London: Harold Shaylor. 1931. Pp. 392. 21*s*.

Mr. Thompson, the honorary curator of the Historical Section of the Museum of the Royal College of Surgeons of England, adds here to his interesting researches into the side-walks of medicine, by collecting, in one volume, historical accounts of famous poisoning mysteries in ancient and modern times. The book is closely packed with briefly written summaries of all the sensational poisoning cases that have found their way to trial, and these narratives are preceded by a definition of poisoning and interesting essays on poisoning generally—the poisons used by primitive man, by the inhabitants of Classic Greece and Italy, by the Hindus and Chinese. Other chapters deal with ancient antidotes and protective methods, the mandrake and poisons used by witches, love philtres and the French poisoning epidemics in the sixteenth and seventeenth century, and with royal and historic poisoners.

No such compendium of crime in its most revolting aspect has ever been brought together before. All the poison mysteries of which the general reader is ever likely to have heard are dealt with, from mediaeval times down to June of this year, for an account is included of the trial and acquittal of Mrs. Hearn for the murder of her friend Mrs. Thomas. The reader is spared moralising and vain surmises as to the explanation of the cases which still baffle solution, and he will be heartened by the author's closing page. Here Mr. Thompson records the considered opinion that the toxicologist and pathologist have now become such formidable foes to the poisoner, that he is no longer able to administer his deadly agents without considerable risk of discovery.

This is a valuable book of reference, for the dates are given carefully in respect of each recorded case, so that a fuller account, if necessary for any purpose, can be readily obtained.

NEW INVENTIONS

UNKINKABLE TUBING.

THE tubing shown in the illustration is practically unkinkable, extremely flexible, and maintains to a remarkable degree its freedom of bore in all positions. Covered with fabric, it is familiar to many as a part

of the gas mask used during the war. The makers, Siebe, Gorman and Co., now supply similar tubing of pure rubber, which I have found of great use in anæsthetics—e.g., as a connexion between the face mask and a McKesson apparatus, or between any form of endotracheal intubation and the anæsthetic supply. They are procurable in various lengths and sizes, from ½ inch diameter upwards, and appear to have many potential uses in medical practice.

They are supplied by A. Charles King, Ltd., 34, Devonshire-street, London, W., and Messrs. Allen and Hanburys, 48, Wigmore-street, London, W.

STANLEY ROWBOTHAM, M.R.C.S., L.R.C.P.

THE LANCET.

LONDON: SATURDAY, OCTOBER 10, 1931.

DEARER DRUGS.

NEARLY all the drugs used in this country come from abroad, and that being the case all doctors and all chemists, as well as all people who buy medicines, will soon be rubbing their eyes and wondering why some of the newspapers keep on saying that the £ is still worth 20*s.* at home. As a consequence of dropping the gold standard most drugs already cost more to buy than they did a few weeks ago. Before Christmas is here there is hardly a drug inside or outside the British Pharmacopœia which will not be dearer. The rate of the advance in price will depend on two things: (1) the volume of supplies at present in this country, and (2) the source of origin of the drugs. With few exceptions stocks here are not abnormally large, notwithstanding that importers had latterly been encouraged by rumours of the imminence of a tariff to increase the size of their purchases from abroad. Had it not been for this, the dropping of the gold standard would have coincided with an unusual paucity of supplies, since druggists, both wholesale and retail, had been buying very sparingly over a long period. To use the words of the market place, they had been "restricting their commitments to their hand-to-mouth requirements," for the twofold reason that money was tight and confidence in the business outlook weak. When the chemists and druggists saw the pound drop to 16*s.*, or thereabouts, in terms of the currencies of the countries from which drugs come, and the wholesale druggists witnessed the same thing, the merchants who buy from the importers were overwhelmed with orders, and in their turn the importers were assailed by merchants anxious to cover their winter needs. This is not to say there was anything in the nature of a panic, or that there was evidence of greediness, but, since business is business, and human nature is what it is, there was haste to buy before prices had soared higher. Merchants who held stocks were obliged to act with special caution, knowing that when their supplies were exhausted they could only be replaced at much dearer rates; consequently buyers had to be satisfied, in many cases, with smaller purchases than they would have liked to make; and sellers, anxious to temper the wind to the shorn lamb, did not exact prices based on full replacement costs, but met their customers about half way by adding 10 per cent. to the pre-crisis figures instead of the 20 to 25 per cent. or more which will have to be paid for new imports.

To explain fully what the fall in sterling means to the drug market would involve a tour of the world with the British Pharmacopœia as companion. The tour without the companion would be agreeable enough, but it must suffice to give a few examples of how prices have reacted to the monetary upheaval. It must be remembered, however, that nearly all drugs will be dearer, in greater or lesser degree according to the country of origin. Indeed, the products of our own factories will not be immune, since they depend largely upon imported raw materials. That very important winter drug, cod-liver oil, is a notable exception. Norway, the source of this country's supplies, has followed our example and gone off the gold basis, so that the £ will buy about as much in Norway to-day as it would buy three weeks ago. It is conceivable that cod-liver oil may advance in price before the winter is over for reasons associated with the law of supply and demand, but so long as the Norwegian exchange remains reasonably stable, round about par, changes in price will not be due to currency disorders. Quinine sulphate is 30 per cent. dearer; the raw material comes mainly from the Dutch East Indies, and the convention of quinine makers bases its quotations on the Dutch guilder. Iodine and its salts have been advanced by 25 per cent.; seeing that the bulk of the world's supply comes from Chile this sharp rise seems curious, but the explanation is that the crude material is sold by the Chileans on the gold-dollar basis only. The great advance in the prices of such commonly prescribed drugs as quinine, iodine, and potassium iodine would have called for comment even had they stood alone, but when we consider that similar advances have been made in the prices of many drugs it becomes clear that the effect on the drug bills of hospitals will be serious. Japanese refined camphor has moved up in sympathy with the upward movement of the yen in terms of sterling; the price is fully 25 per cent. higher. Up to the present British refiners of camphor have not advanced their quotations to a corresponding extent, but they will be compelled to do so in due course. The market for quicksilver is controlled by a Spanish-Italian understanding, and when the pound lost its moorings this barometric indicator rose more rapidly than it has ever risen before. As a consequence, calomel, corrosive sublimate, and all the other salts of mercury are much dearer. Citric acid, whether of Italian or American origin, has advanced in price substantially, and therefore potassium citrate and all the other citrates have gone up in price. Cream of tartar is dearer by about 25 per cent. to the importer.

Our crude drugs come from all over the world. The rhubarb of medicine is not the kind that is grown in our kitchen gardens, nor is opium obtained from Shirley poppies, as the man in the street might suppose. Our medicinal rhubarb comes from China, and is dearer because the drop in the £ has sent up the price of silver on which metal

Chinese transactions are based. The prices for drugs from the United States, among which are such well-known commodities as cascara sagrada, senega, and podophyllin, will cost the British importer about 25 per cent. more should the dollar exchange remain approximately at its present level. Gentian, colchicum, belladonna leaves and root, and liquorice root, among many others, reach us from Central Europe, and their prices will vary according to the rate of exchange of the country of origin. Chamomiles come from France and Belgium and are already 25 per cent. dearer. Scammony from the Eastern Mediterranean, stramonium from Germany and Hungary, and tragacanth from Persia are all dearer. Cinchona from the Dutch East Indies, valerian, whether it comes from Belgium or Japan, have also mounted up in price, but these named drugs are but a few out of hundreds for which the British public will have to pay more. Moreover, prices will not be stable but will vary according to the value of the pound in the countries from which our supplies are obtained.

The main source of supply of many of our fine chemicals and synthetic products is Germany, and so long as that country remains on the gold standard, and the pound is at a heavy discount there, an almost interminable list of drugs will be substantially dearer. Quotations for shipment from Germany are now based on the pre-crisis rate of 4·86 dollars to the pound, so that for the time being the importer's bill for these items has gone up by about 5*s*. in every pound; in other words, the importer has to pay about 20*s*. for 16*s*. worth of goods. France and Switzerland are also very important sources of supply of fine chemicals and so-called "new remedies," and the cost of these has gone up to a like extent. Much the same applies to essential oils from Sicily, America, and Japan. It may be that if the pound remains in disgrace long enough our own manufacturers of fine chemicals, sheltered by the protection afforded by the tariff-effect of the discounted pound, will be stimulated to produce in this country some of those commonly prescribed synthetic remedies which are not made here at present. It may also happen that our home manufacturers will be enabled to increase their output of products which are already made here in commercial quantities and sold in competition with Continental producers. To mention only one range of drugs, German makers of bromides have been endeavouring to embarrass British makers by the process of underselling for a long time past; up to the time of the monetary crisis they had not succeeded, and their efforts in that direction will have to be postponed until the pound looks the mark in the face again. The extent to which hospital drug bills will be increased cannot be measured by the increased cost of drugs to the importer; his outlay of capital will be larger, and to protect himself he may have to charge more than the increased amount to the distributor who supplies the hospitals, and the distributor in turn may be compelled to have regard to his expanded monetary outlay when fixing reselling prices.

THE OBSTRUCTING PROSTATE.

FAILURE to recognise the fact that different pathological conditions are grouped under the convenient heading of senile enlargement of the prostate has led to much confusion, more especially in articles dealing with results obtained from various methods of treatment. Even the term enlargement is a misnomer, for in many cases of obstruction the prostate is normal in size. In others, a local enlargement may have occurred, but it can only be discovered with the help of a cystoscope by one specially skilled in this form of examination. The troubles that arise from the prostate in the later years of life are not due to a single pathological entity but to a variety of changes affecting that gland, and the causes which are responsible for these changes are imperfectly understood. Whilst it is generally agreed that the small hard prostate often found in cases of obstruction is the result of chronic inflammation, no certain explanation has yet been given of the commoner soft and definitely enlarged gland. Perhaps the most commonly accepted view is that this type of enlargement is adenomatous in character, although against this view is the fact that as a general rule adenoma appears at a period of functional activity rather than in the later years of life when this activity is on the wane. Formerly CIECHANOWSKY'S view that the glandular increase is apparent rather than real, and due to dilatation of acini following inflammation round the ducts, found considerable favour, but of late this inflammatory explanation of enlargement has become less popular. Indeed, the only serious rival to the theory of adenoma is that advocated by Mr. KENNETH WALKER in his Hunterian lecture[1]—namely, that the enlargement is in the nature of a fibro-epithelial degeneration analogous to the condition which may be found in the female breast at the time of the menopause. According to this theory the enlarged prostate is the site of a particular form of degeneration occurring at the male climacteric and implicating the whole of the genital tract.

Where the pathology is in doubt but little progress can be made in ætiology and prevention. If the theory of adenoma be correct, no preventive treatment can be formulated until more is known of the causation of new growths in general. If, on the other hand, the enlarged prostate is an involutionary process endocrine therapy, provided that sufficiently potent extracts are available, should have some effect in preventing the onset of enlargement. It must be admitted that none of the theories of causation explains why one man who has reached the age of 60 should have developed an enlargement of his prostate, whilst three of his fellows who have followed a precisely similar manner of life have escaped. But although enlightenment as to causation and the hope of prevention thus still lie in the future, treatment cannot be postponed. Does surgery offer the only hope of dealing adequately with the condition, or may certain cases of enlargement

[1] Brit. Med. Jour., 1922, i., 297.

be amenable to other forms of treatment? On p. 788 of our present issue appears a paper dealing with the physical treatment, as practised in New York, of various prostatic lesions, amongst others the enlargement of old age. Dr. TITUS and Dr. PEDERSEN claim that physical therapy is a valuable agent in the treatment of enlargement and is a means of postponing or even of avoiding the necessity of subsequent surgical intervention. A few months ago Dr. J. CURTIS WEBB claimed [2] equally favourable results from the use of deep radiotherapy, diathermy, and the static wave. In foreign medical literature there are many references to the value of radiotherapy in the treatment of prostatic lesions. Our own genito-urinary surgeons have been apt to regard the idea of attempting to deal with well-marked enlargement of the prostate by any form of electrotherapy as illusory. Any amelioration of symptoms has been held to be temporary and due to the periods of improvement which are the normal course of prostatic obstruction. The obstruction, they contend, is not entirely explained along mechanical lines; there is a dynamic factor in the nature of a spasm, as well as a static one in the form of enlargement. Electrotherapy may have an effect on the spasm; it can have little or none on the underlying enlargement. The position of the surgeon is easily understood. Prostatectomy has justified itself as the operation of choice in all cases of enlargement associated with obstruction. So far he has not been convinced that any form of electrotherapy is able to diminish the size of the prostate, except perhaps deep X ray therapy given in such large doses as to be dangerous to the vitality of the intervening tissues. He is therefore inclined to view with suspicion the employment of measures other than surgical except perhaps in early cases, or in those in which an operation for one reason or another is too risky to be undertaken.

But great as have been the triumphs of prostatectomy in relieving what before the days of FREYER, MCGILL, and FULLER was an incurable condition, a dispassionate review of the results of prostatic surgery shows that operative treatment is associated with a mortality that is far from negligible. For this reason it is important that we should not neglect the investigation of any form of treatment that carries with it a smaller risk than that of prostatectomy; and since organotherapy has so far failed to give results the claims of electrotherapy should receive sympathetic hearing. Generally speaking, it may be applied in one of two ways: either in the form of diathermy, radiation, galvanism, static electricity, or X rays applied to the prostate as a whole, or in the form of surgical diathermy for the purpose of removing portions of the obstructing prostate, and so restoring the patient's capacity to empty his bladder. Both methods are of value provided discrimination is exercised in selecting suitable cases; it is, indeed, on account of faulty selection that electrotherapy has in many quarters failed to gain the recognition that it merits. Attempts have been made to deal by electrical means with cases that could only be satisfactorily treated by prostatectomy, and conversely patients who might conceivably have been relieved by less drastic measures have been subjected to operation. The surgeon alone is capable of recognising the type of prostatic obstruction from which the patient is suffering, and of gauging accurately the probable effect of the measures to be adopted. Progress in non-operative treatment will need the closest collaboration between surgeon and electrotherapist. Only then will it be possible to discover what is the scope and what the limitations of electrotherapy in the treatment of prostatic conditions.

[2] THE LANCET, 1931, i., 957.

PUERPERAL INFECTION AND DIETARY DEFICIENCIES.

IN 1929 Prof. EDWARD MELLANBY and Dr. H. N. GREEN reported observations on the treatment of puerperal septicæmia with preparations containing vitamin A. Their results were encouraging. At the hospital where the investigation was conducted there had been 22 cases of puerperal septicæmia during the previous two years, of which all but two proved fatal. From the time when vitamin A was given there were nine cases, and recovery took place in eight of them.[1] The experience of others, however, does not seem to have been so favourable, and the rationale of using vitamin A therapeutically has been criticised. A. H. G. BURTON and A. R. BALMAIN,[2] who examined the influence of vitamin A on antitoxic immunity as demonstrated by Dick tests, held that it was doubtful whether the effects which had been described as following its administration for the purpose of treatment were not a coincidence. W. CRAMER [3] supported this view by saying that "there is no evidence . . . that vitamin A can cure infections once the barrier of the mucous membranes has been passed, or that it can prevent or cure those infections which enter by the blood stream or by the subcutaneous tissues, as they do, for instance, in puerperal septicæmia." BURTON and BALMAIN found it hard to see on what grounds it can be held that the ingestion of a vitamin or any food factor can effect a prophylactic action without the stimulus provided by a specific toxin; and in fact they gained no good results by administering Radiostoleum (vitamins A and D) to 52 women during pregnancy. They admitted, however, that there is reason to believe that a deficiency of vitamin A in the diet predisposes to changes in the epithelial linings of mucous tracts, and CRAMER stated that an adequate supply of vitamin A is a powerful physiological prophylactic against infections entering by the mucous membranes.

In their latest paper Prof. MELLANBY, Dr. GREEN, and their co-workers, Dr. D. PINDAR and Mr. G. DAVIS,[4] refer to evidence that women during pregnancy are specially liable to develop

[1] Brit. Med. Jour., 1930, i., 677.
[2] THE LANCET, 1930, i., 1065.
[3] Ibid., p. 1153.
[4] Brit. Med. Jour., Oct. 3rd, p. 595.

gross signs of vitamin A deficiency. They say that the infective foci found in animals suffering from this deficiency are particularly prominent in relation to squamous, columnar, and ciliated epithelium, such as are found in the generative organs. And they mention GREEN'S observation that pregnant rats lacking vitamin A commonly develop chronic sepsis of the generative tract. These data, together with the results of treatment already mentioned, have led them to test the value of vitamin A as a prophylactic against puerperal infection, and this task has been undertaken at Sheffield under the auspices of the Medical Research Council. The report published in last week's *British Medical Journal* shows that out of 550 pregnant women attending two antenatal clinics in Sheffield, 275 were treated with vitamin preparation (radiostoleum, provided by British Drug Houses, Ltd.), while 275 untreated served as controls. The first patient was given the preparation, and the next due for delivery about the same time was indexed as a control. The vitamin and control groups were thus equally distributed in point of time; seasonal and epidemic or contagious influences predisposing to infection therefore tend to be equal in the two groups. The results are classified on the basis of the B.M.A. standard for puerperal morbidity—that is, all cases are called morbid which show two rises of temperature to 100° F. or over between the end of the first and the end of the eighth day after delivery. In the vitamin group there were only three morbid cases on this standard, an incidence of 1·09 per cent. In the control group there were 13 morbid cases, an incidence of 4·73 per cent.—a rate over four times as high as the rate of the vitamin group. Statistically it can be shown that this difference is unlikely to have occurred merely by chance. If, in spite of its statistical significance, anyone should think that the difference between two such small percentages is so small as to be of little practical importance, let him remember that there are annually in England and Wales some 600,000 births, and that a reduction of this puerperal morbidity-rate from 4·73 to 1·09 per cent. implies, roughly, a reduction from 28,000 to 6,000 cases. Comparing all cases which showed *any* degree of puerperal pyrexia, the authors found the total number in the vitamin group was 56, an incidence of 20·4 per cent., and in the control group 98, an incidence of 35·6 per cent., again a statistically significant result. When the number of cases was ranged according to a rough standard of clinical severity the incidence of sepsis of a major type was significantly greater in the control group.

These results indicate that in the above experiment the administration of vitamin A during the last month of pregnancy diminished the liability to a morbid puerperium. It is to be hoped that further studies will be immediately undertaken by other workers in confirmation of them, for their importance needs no exaggeration. It is probable that the diet of many people in this country is deficient in vitamin A, the main sources of which are found in the more expensive foods, such as milk, butter, eggs, and certain vegetables. The pregnant woman is in still greater danger of a deficiency, for she has not only to supply her own body but also that of a rapidly growing organism. Unless her intake of vitamin A is high the liver stores are gradually reduced during pregnancy, and if vitamin A plays a part in resistance to infection, as is now evident, she may be expected to be more susceptible to sepsis at this time. Here we have a simple prophylactic measure which deserves a widespread test. Inquiries, moreover, should not be confined to puerperal infection, but should embrace for instance broncho-pneumonia, colds and acute rheumatism.

THE PANEL CUT.

A MONTH ago panel practitioners intimated to the Government through the Insurance Acts Committee that they were prepared to bear their fair share of the burden which the community generally were being called upon to shoulder. This intimation implied acceptance of the reduction of the capitation rate by one shilling, as recommended by the May Committee. Representatives of panel practitioners were then assured that the Government's proposals for economy were to stand or fall as a whole, and the question was reopened when a fortnight later these proposals were modified as they affected teachers and some other groups. On Sept. 24th, the Minister of Health, in consultation with the Chancellor of the Exchequer, informed the I.A.C. that he was prepared to substitute an all-round reduction of 10 per cent. for the reduction of one shilling previously proposed. The I.A.C. then requested the Minister to make allowance for the expenses of practice or in other words to calculate the percentage deduction from the capitation fee upon the net and not upon the gross earnings; but Mr. Chamberlain replied that he could not recommend any modification of his proposal for the reasons that it was impossible to secure precise equality of treatment, and that the principle of making allowance for expenses might apply to other classes of the community. In view of this reply the I.A.C. did not consider itself justified in accepting an all-round reduction of 10 per cent., and the whole matter is to be discussed at the Conference of Local Medical and Panel Committees which has been summoned for Thursday, Oct. 22nd. In the meanwhile panel committees are requested to hold meetings of insurance practitioners in their areas in order that instructions may be given to their representatives at the conference.

THE CONGRESS OF COMPARATIVE PATHOLOGY.—The second International Congress of Comparative Pathology opens on Wednesday next in Paris, in connexion with the Colonial Exhibition. Prof. C. Achard is the president, and the English participators will include Prof. G. S. Wilson, Mr. F. C. Minett, and Dr. J. Henderson Smith.

THE FINANCIAL POLICY OF HOSPITALS.—The International Hospitals Association, which represents Great Britain, America, Austria, France, and Germany, has appointed a committee to consider and make definite recommendations concerning the most effective system of financial administration for hospitals. Captain J. E. Stone, secretary of the Birmingham Hospitals Centre, has been appointed representative for Great Britain and chairman.

ANNOTATIONS

EPSOM SCHOOL SANATORIUM.

ON Saturday last Lord Dawson of Penn opened the new sanatorium at Epsom College. The gathering was a large one, and included medical officers and administrators of public schools, naturally curious to see what Epsom, with its 60 per cent. of doctors' sons, does for their hygienic environment. Lord Dawson described the sanatorium which he opened as a middle course between idealism and efficiency, but a careful comparison of the specifications and plans which appeared in our columns on Dec. 3rd, 1927 (p. 1184), with the lay-out inspected on Saturday, suggests that economy has been practised only at the expense of what could well be spared. In his memorandum on the accommodation for the sick provided by certain public schools for boys in England, published [1] three years ago, Capt. W. Dalrymple-Champneys, after noting the provision existing at the schools he visited, set out certain requirements which have been followed closely at Epsom. He gave the standards per bed as 100 square feet of floor space, 1000 cubic feet of effective air space, and 800 feet of wall space; each of these standards has been exceeded at Epsom with the exception of the wall space in the smaller wards, which may be only a trifling falling away from hygienic grace, in view of the abundant window space and ideal exposure to sun and air of the whole building. He suggested that the total number of beds should not be less than 18 per cent. of the boy population; at Epsom, which has well over 400 boys, 50 beds have been provided in the sanatorium—for the sanatorium makes provision under one roof for the separate care of infectious and non-infectious cases, and also for observation, convalescence, and most of the out-patients. Illness is excluded in principle from the ordinary school life, and there will be no sign of it in any of the houses except for the attendance of a nurse at a specified hour at two spots for simple out-patient treatment.

The sanatorium, as now opened, combines a number of hygienic aims which may be briefly set out. In the first place it can be employed by sections, each of which can be isolated in respect of heating, lighting, and water-supply by a simple valve arrangement. Then the building is so arranged as to be able to deal at one and the same time with ordinary ailments and accidents, as well as with four distinct simultaneous infections of school life, such as chicken-pox, mumps, measles, and influenza. Graver infections, such as small-pox, diphtheria, and enteric fever, would as heretofore be sent away to special hospitals. Administrative arrangements have been simplified so that the normal running can be done by a small staff, whilst affording instant accommodation for an increased staff in case of epidemics or emergencies. Provision is made for indoor recreation for convalescents. There are open-air balconies and cheerful solaria for patients that require them, and there is proper accommodation for unmarried masters when sick. Finally, there is an X ray room to which every injury is sent whether there is suspicion of a fracture or not—many partial fractures have, in the past, been thus revealed—and a theatre with accessories for whatever minor operative measures may be needed. It may be that in the past, as stated in the preface to the memorandum above mentioned, the physical welfare of boys at our public schools has been too often a secondary consideration, but the slur has certainly now been redeemed at Epsom College.

But even on Saturday no one was allowed to think of the sanatorium but as one side of the efforts at Epsom to live healthily. The well-organised system of physical education, said Lord Dawson, is an admission that the training of the body has an importance equal to that of the training of the mind. Physical education properly conceived—not the old mechanical soul-destroying drill—is also an effective means of training, on the one hand, mind and character in initiative, leadership, power of expression, and on the other, the body to beauty of form, resilience in movement, and that perfection of function of lungs and skin which gives endurance and adaptation to changing climate and resistance against disease. Physical education in too many schools tumbles along; some headmasters, he added, have not even begun to understand it. Instead of a few odd hours grudgingly conceded, physical culture should occupy a definite place, and it then would enhance the value and enjoyment of games and sports. Consideration of physical education led Lord Dawson to suggest that the duties of medical officers of schools should not be limited to the care of boys who are sick; the doctors should make a study of physical education and responsibly coöperate in its purpose. This does not mean that they should participate, still less interfere in its day-to-day performance, but they should study physical education in being and its reactions on different boys. In this way the trained eye would detect in an early stage and without formal examination defects of frame and function at a stage when they could be easily rectified. For the time, he said, to study a boy is in movement; only then are to be detected the defects of shape or expansion of chest, the defects of mouth and nose breathing, the commencing asymmetry of frame, the early flat foot, and those cases in which exercises produce fatigue rather than vigour, and pallor rather than glow. Thus the educational and the remedial would be correlated. It is tragic, he concluded, to think how often doctors see defects which could have been rectified and which are a handicap to life's fulfilment.

[1] Ministry of Health, 1928. H.M. Stationery Office. Pp. 35. 1s.

SUBSTANCES EFFECTIVE IN PERNICIOUS ANÆMIA.

THE practical value of the parenteral administration of liver extracts, which we discussed on Sept. 12th, receives further confirmation in our columns to-day. Dr. J. F. Wilkinson describes satisfactory results in treating severe cases of pernicious anæmia with a preparation free from blood-pressure reducing substances, though also a derivative of the original G fraction of Cohn and Minot. As with the extracts used by the Boston group [1] that employed by Wilkinson, now on the market as Hepatex, is effective in smaller amounts than if given by mouth.

Knowledge of the possible chemical constitution of the active principle in liver is also advancing. West and Howe [2] amplifying their earlier work with H. D. Dakin, now report that a quinine salt of a tribasic acid containing the pyrrolidine ring, when injected intravenously into patients with pernicious anæmia, gives a mild reticulocytic response. The

[1] Strauss, M. B., Taylor, F. H. L., and Castle, W. B.: Jour. Amer. Med. Assoc., August 1st, p. 313.
[2] West, R., and Howe, M.: Ibid, Sept. 5th, p. 685.

structure tentatively adopted for this acid is in close relationship to the pyrrole derivatives that have been isolated from hæmin, while nearly related porphyrins occur in other respiratory pigments. Arguing, therefore, that the effective principle in liver probably consists of one or more pyrrole precursors which may be utilised by the body in the formation of hæmoglobin and other respiratory ferments, West and Howe make the somewhat revolutionary suggestion that pigment metabolism rather than red-cell stroma formation is defective in the pernicious anæmia syndrome. They also suggest that, since the respiration ferments from various sources appear to be clearly allied in structure, the effective principle in liver may be a percursor of respiration ferments essential for cellular respiration, and that lack of such a ferment is responsible not only for the blood changes, but also for the cord lesions. They themselves, however, admit that the amount of hæmoglobin appearing in response to a given dose of effective material is greater than would be expected if one were dealing with a simple pyrrole precursor. Further doses as large as 800 mg. given intravenously only gave a mild reticulocytic response, while Cohn, McMeekin, and Minot [3] have reported maximum responses with 480 mg. of an admittedly impure fraction. If hæmoglobin formation is alone at fault in the pernicious anæmia syndrome, why is the colour-index always high, signifying an ample hæmoglobin content of the cells, and why is the body loaded with pigments in the acute stage? Again, why is there such an extremely characteristic and constant structural change in the red cells as evidenced by the megaloblastic bone-marrow found in those anæmias which respond to liver, and not in those that are dependent upon faulty hæmoglobin production as idiopathic microcytic anæmia?

It is clear that the exact interpretation of these preliminary results must await a more prolonged study of the adequacy of the materials isolated from liver and ultimately their synthesis.

[3] Cohn, E. J., McMeekin, T. L., and Minot, G. R.: Trans. Assoc. Amer. Phys., 1930, xlv., 343.

DYNAMIC RETINOSCOPY.

DYNAMIC retinoscopy is the name given to a method little known in this country but which apparently has some vogue in the United States. Ordinary or "static" retinoscopy depends for its accuracy on relaxation of the accommodation on the part of the patient, either voluntarily, or involuntarily after the use of a mydriatic. The new method involves voluntary accommodation to a point equal in distance from the patient's eye to that of the (plane) mirror by which he is being tested. This is achieved by means of figures or letters attached to the mirror in such a way that the patient, in fixing them, directs his eye only slightly away from the line of light reflected into it. As a preliminary it is necessary to refract the eyes of the patient in the ordinary way with accommodation relaxed, and the sole object of the dynamic method is to determine what amount of plus glass is necessary to add to the patient's distant correction in order to give him comfortable vision at reading or any other distance. This cannot be done by rule of thumb, inasmuch as the amount of accommodation to be relieved by an extra plus glass depends not only on the degree to which the patient's crystalline lenses are sclerosed in accordance with his age, but also on the condition of his muscle balance. Exophoria causes a certain amount of latent relative accommodation to become manifest, and esophoria does the reverse. The strength of a presbyopic glass required by an exophoric patient will therefore be more than that required by an orthophoric, and that by an esophoric patient less. The greater part of a brochure, recently published by Dr. M. Dobson,[1] is occupied by an explanation of this relationship and its implications. What is not completely explained is how, with a small pupil—necessarily made smaller by the reflex action of light and the synergic action of accommodation—greater accuracy can be obtained, even with a "pointolite" lamp than by the older method. Dynamic retinoscopy, says the author, is the only known method of measuring and correcting presbyopia objectively, and is perhaps "most useful in the refraction of hypermetropic eyes in non-presbyopic cases, when both manifest and latent hypermetropia is present, with or without ciliary spasm." It goes without saying that in all such cases, and still more in the case of myopes, the relationships of accommodation, convergence, and muscle balance must be taken into account, but it will need more convincing arguments than those contained in this book to induce many ophthalmic surgeons to substitute this new method for their well tried old ones.

[1] Dynamic Retinoscopy. By Margaret Dobson, M.D., Ophthalmic Surgeon to the New Sussex Hospital for Women, Brighton. London: Humphrey Milford, Oxford University Press. 1931. Pp. 56. 7s. 6d.

A STREPTOCOCCAL CARRIER.

THE theory that many cases of puerperal fever are due to infection by organisms incubated in the throat of a person in contact with the mother is rapidly gaining ground. It is, however, difficult to produce unequivocal evidence of an epidemic caused by a single organism in a large lying-in hospital, where the other possible sources of infection are so many. Drs. Paul Courmont and Paul Sédallian report [2] an isolated epidemic in which they claim that the carrier of the infection was established beyond reasonable doubt and the bacteriological evidence was practically conclusive. A midwife complained of lumbar pain on May 12th and consulted a doctor, who saw no reason why she should cease work. On May 27th, feeling no better, she consulted a second doctor, who gave the same opinion. On June 2nd she had a rise of temperature to 104° F., diffuse arthralgia and symptoms of septic throat; the symptoms lasted for three days. At the end of this time she developed a scarlatiniform eruption which, however, was not diagnosed as scarlet fever. By June 9th she had completely recovered. Between May 24th and June 11th she attended 11 confinements in all: six of the mothers developed puerperal fever and one died. The nurse, being very concerned at the successive development of so many cases of infection, had exercised special care. On June 12th a bacteriologist of known competence recovered hæmolytic streptococci from a culture of a throat swab, and swabs taken on June 17th and July 2nd also yielded almost pure cultures. The strain thus obtained was compared with a strain cultured from one of the cases of puerperal infection. Both were strongly hæmolytic and had the cultural characteristics of streptococci. The throat strain was virulent in guinea-pigs, a fact which shows its capacity for producing septicæmia. The two strains had identical actions on carbohydrates, fermenting all the usual sugars and failing to ferment arbutine, esculine, amygdaline, and mannite. Rabbits prepared with

[2] Presse Méd., Sept. 9th, p. 1325.

each culture gave cross-agglutinating sera. Considering the great number of different known streptococci, the authors claim that this similarity amounts practically to identification. Previous work has shown them, they say, that streptococci isolated from infected patients in the same hospital over a period of two years were all of the same bacteriological type, and that streptococci taken from women confined outside the hospital were of different types. They are doing further work on the bacteriology of the present epidemic. This report undoubtedly provides evidence of considerable weight for the droplet ætiology.

THE HISTORY OF INDUSTRIAL MEDICINE.

THE activities of animal life are a blessing whence originate health and, for mind-possessing man, happiness. But man, while his intelligence was dimly dawning, converted this blessing into a curse; and was continuing so to do when historical times open. Thence onward the story of occupational diseases and of forced labour, commencing with early Egyptian records, has just been told in a review contributed by Dr. L. Carozzi to the encyclopædia compiled by the International Labour Office at Geneva.[1] The copper industry is an instance which arose about 5300 B.C., when conquered women and children were the first miners, goaded on by soldiers to their labours. An early papyrus is quoted:

"I have never seen a blacksmith acting as ambassador or a foundry worker sent on a mission, but what I have seen is the metal worker at his work; he is grilled at the mouth of the furnace. The mason, exposed to all weathers and all risks, builds without clothing. His arms are worn out with work, his food is mixed up with dirt and rubbish; he bites his nails, for he has no other food. The barber breaks his arms to fill his stomach. The weaver engaged in home work is worse off in the house than the women; doubled up with his knees drawn up to his stomach, he cannot breathe. The laundryman on the quays is the neighbour of crocodiles. The dyeworker stinks of fish spawn; his eyes are tired, his hand works unceasingly, and as he spends his time in cutting up rags he has a horror of clothing."

The gigantic masterpieces of architecture which stand to-day on the banks of the Nile are evidence of the cruel sacrifices demanded of human tools by the Pharaohs. Dr. Carozzi recalls that Hippocrates recognised lead poisoning, and Plato noted how an artisan's body may be deformed by the exercise of his profession. He has discovered a pamphlet, written by Ulrich Ellembog in 1743, insisting on the toxic action of carbon monoxide, lead, mercury, and other metals. By a curious misprint this pamphlet is stated to have been printed for the first time in 1524. A short sketch is given of the life and work of Ramazzini. This remarkable man recognised the influence of the way life is lived upon the way death has to be faced; he was a scholar, a physicist, a geologist, a hydrologist, as well as a doctor, and above all a hygienist; a maxim he cites is *longe præstantius est præservare quam curare*. He added to the famous questionaire of Hippocrates the pertinent query "what is your occupation?" He lived to a ripe old age, dying at last of apoplexy on his way to lecture at the University of Padua. Dr. Carozzi goes on to relate how, with the industrial development which saw its birth in Great Britain, the existence of ill-health and disease arising from occupation became recognised, and was the cause for factory legislation, which was the first effort at a public health code. He closes with pointing out the unexpected influence which the world war exerted upon the development of industrial hygiene, when the health of the munition worker became as important to the preservation of the state as the activities of the fighting forces.

[1] Occupation and Health: Industrial Diseases. Historical Review (Brochure No. 254).

OSLER

IN two large volumes Dr. Harvey Cushing has written with eloquence, breadth, and detail, the life of William Osler, but because that biography was so large we find a brief appreciation of the great physician welcome, and we have no doubt that many readers will share this sentiment. Miss Reid[1] was a close friend of Osler and his family, and this has enabled her to obtain new material as well as some interesting illustrations, among others a charming representation of Osler's centenarian mother. A vivid and sympathetic history is here of one who combined the closest spirit of scientific inquiry with the openest appreciation of human life in general. The reason of Osler's successes, as physician, as teacher, as author, and as man of the world are all made clear, and we can appreciate how often the unexpectedness of his words or his attitudes lent them their great significance. He was able to illustrate abstruse doctrines with the homeliest examples, to act as a philosopher while joking as a schoolboy; his reading was enormous, and his antiquarian interests profound, but he never dropped into pedantry; he resolutely eschewed sentiment, and was one of the most affectionate of men. Although at the end of Osler's life he was so stricken by the loss during the war of his only son, he tried to staunch the wound in his heart by work, and in all the waste and misery of the war he understood the good that could be rescued if every readjustment were an advance towards permanent peace. He has been spared the miserable medley of disorder and futility which has in so many fields taken the place of readjustment, but it is probable that if a few such as he had been among the international workers of the last decade the world would present a different picture. For Osler had the equipment of the true international, the brains needed to follow, and the power of sympathy needed to appreciate the aspirations of his fellow men, whatever their geographical home.

TUBERCLE IN INDIAN CITIES.

Dr. M. Kesava Pai, superintendent of the Madras tuberculosis hospital, estimates[2] that there are at least 30,000 persons suffering from active tuberculosis in Madras. Roughly he thinks there must be a case to every other house in the city, and the picture he draws of the dirty, ill-ventilated, and overcrowded tenements in which they exist is sufficiently impressive. The construction of a new tuberculosis hospital is under consideration and its location has given rise to much controversy. There is considerable opposition to the proposal to build within city limits. That section of public opinion which fears infection and urges that it should be built in rural surroundings appears likely to prevail. Dr. Pai, on the other hand, argues that it would be of more use if centrally situated. In the absence of adequate provision of tuberculosis dispensaries there may be something to say for this point of view. Meanwhile any controversy of this kind sinks into insignificance when contrasted with the importance of preventive propaganda. Tuberculosis has been a scourge of India

[1] The Great Physician: A life of Sir William Osler. By Edith Gittings Reid. London, New York, and Toronto. Oxford University Press. 1931. Pp. 299. 12*s*. 6*d*.

[2] The Antiseptic, June, 1931.

from time immemorial. The medical literature of ancient India is full of references to this disease. But whereas in progressive communities of Europe and America it is on the downward trend, and likely to become still less prevalent, in the crowded cities, and even the villages of India, it is still on the increase, and until the habits of the people alter there is every prospect of further spread. There are two remarkable facts which, amongst others, should attract the attention of Indian reformers to the question of ventilation particularly. It is well known that cattle in the warmer parts of the peninsula, where the most they have in the way of housing is a roof without walls, hardly ever suffer from tuberculosis, though many of them are under-fed and neglected; and Europeans, who mostly live in large airy houses, with windows and doors thrown wide open, are similarly almost immune. An open-the-window campaign, if it met with general success, would do more to free India of tuberculosis than all other measures taken together, and would improve health in other respects also.

MEDICINE AND OTHER SCIENCES.

THIS year the seasonable pronouncements on the modern medical outlook in connexion with the opening of the autumn session at the medical schools provided, as usual, stimulating and provocative material. Sir Farquhar Buzzard dealt not directly with the curriculum but with the organisation which defines it, finding little to criticise and much to commend; Sir George Newman considered how best the student's training may be coloured by "the preventive principle and the preventive trend"; while Prof. H. R. Dean concerned himself chiefly with the relation of medicine to the sciences often called ancillary, which he prefers to call her daughter sciences. He chides them gently for affecting a superiority to their mother because she is proud to do useful work, while they pursue knowledge for its own sake. His remedy is that not unknown in domestic life—to use the proceeds of their labour to support the joint household. He would certainly make every effort to keep them in close touch with each other and with medicine. Dr. A. E. Cohn,[1] of the Rockefeller Hospital, New York, favours development on rather different lines. He accepts the view that medicine is largely the mother of the sciences, but holds that now that she has shed chemistry and physics and biology, she ought to get rid of therapeutics and hygiene, leaving herself free to study the processes and arrangements of diseased life without necessarily having any idea of consequent practical action. A diseased person, in short, is worth studying as a biological phenomenon, just as a healthy earthworm is worth investigation. Those who think that our medical students are already taught in a shockingly unpractical manner will probably read Dr. Cohn with horror, if they read him at all. A little reflection may lead them to a more sympathetic view. Practical advance comes sometimes from direct attack, but more often through some side line, and it is always based on a great groundwork of abstract knowledge. For all our knowledge of anatomy, physiology, and chemistry, our understanding of diseases as such, is very imperfect: this may well be because, as Dr. Cohn argues, we have looked on diseases, as resultants and not as things in themselves. What applied medicine needs to augment its capacity to prevent and cure is a better groundwork of abstract medicine, and it is this fundament which Dr. Cohn urges us to study. With this advice Prof. Dean would certainly not disagree, nor would he disagree that the proper concern of medicine is the study of the phenomena of disease as they are manifest in affected persons. But when Dr. Cohn proceeds to argue that Laennec's dictum that the aim of medicine is the cure of disease is no longer true, he will find few followers. Possibly a slight but important adjustment of nomenclature would make his views more generally acceptable. The demands which Dr. Cohn makes for the science of medicine are exactly those which others make for the science of pathology.

[1] Medicine, Science and Art, by A. E. Cohn, Chicago. University Press. 1931. Pp. 212. $4.

THE DR. ALFRED COX TESTIMONIAL FUND.

As we announced recently, Dr. Alfred Cox will retire from the post of Medical Secretary to the British Medical Association, which he has so long occupied and with such distinction, at the centenary meeting of the Association in London next year. Dr. Cox has held the position, including three years duty as Deputy Medical Secretary, for 25 years, and has discharged the heavy duties not only with unfailing devotion to the Association but to the substantial benefit of the whole medical profession. At the recent meeting of the Association at Eastbourne it was decided that a Fund should be raised to provide a permanent memorial of the man and his work. It was decided that the memorial should take the shape of a portrait to be placed in the B.M.A. House, and a substantial personal gift to Dr. Cox himself. This gift will take the form of a cheque, accompanied by a volume recording the names of the subscribers to the Fund. An appeal has now been made to the members of the B.M.A. for subscriptions "not exceeding 10*s*. per member," and a prompt response is requested, having regard to the time that will be necessarily occupied in the preparation of the book of subscribers. Replicas of the presentation portrait will be available at prices according to the style requested. All correspondence relating to the department of the hon. treasurer of the Fund should be addressed to Mr. N. Bishop Harman, at the B.M.A. House, Tavistock-square, London, W.C. Dr. E. Rowland Fothergill is acting as hon. secretary to the General Committee.

THE Council of the Royal College of Physicians of London have decided that it would be inopportune to hold the annual Harveian banquet arranged for Oct. 19th in this time of economic stress and political uncertainty. Dr. Hutchinson's oration will be delivered, as usual, at 4 P.M.

NATIONAL INSTITUTE OF CHILD PSYCHOLOGY,—A new foundation, established at 19, Warwick-crescent, London, W. 2, has arisen out of the "Children's Clinic" which was first started in Clarendon-road, Kensington. Its activities include the provision of a one-year training course for workers with difficult, nervous, and delinquent children. Part of this course is to be taken at the University of London and part of it at the institute, the honorary director of which is Dr. Margaret Lowenfeld. Shorter courses are to be available for medical men and women. The subjects to be covered include anatomy, physiology, psychology and comparative psychology, psycho-pathology and mental hygiene, growth, common myth and fairy tale in relation to work done by children, principles of rhythmic work with maladjusted children, the designing and keeping of records, and practical work in the playroom. A considerable period of time will be devoted to the study of complete, carefully-analysed records of children attending the clinic. Examinations will be held and certificates granted to successful candidates.

MODERN TECHNIQUE IN TREATMENT

A Series of Special Articles, contributed by invitation.

CCCXIX.

THE TREATMENT OF ADVANCED PULMONARY TUBERCULOSIS.

PART II.*

Insomnia.

IT is of paramount importance to determine the cause of sleeplessness—whether pain, cough, or dyspnœa—and to treat it. Excluding these special causes, it is surprising how often sleep can be induced by the ordinary nursing methods of hot drinks and tepid sponging last thing at night. Bromide and chloral āā grs. xx. will usually succeed where these methods fail, and in my experience they are the most useful of the mild hypnotics and can be reinforced if necessary by another drug, such as paraldehyde ℥i.–ii. as a repeat dose. It is wise to give a hot drink at night as a routine, as it has the additional advantage of stimulating expectoration of any secretions in the tubes, leaving the patient comparatively free from cough during the rest of the night. For the worrying introspective patient no drug equals Dover's powder grs. x., which in single or repeated doses rarely fails to induce sleep.

When insomnia is intractable with general or local pains opiates should not be withheld: nepenthe ℥xx.–xxx. (an excellent drug), morphia gr. 1/4 or heroin gr. 1/6 are useful; heroin gr. 1/6 with hyoscine HBr gr. 1/100 is a good combination and is more certain in action than the rest. On the whole, if hypnotics are used it is wise to push them until sleep is induced, otherwise the patient has one more poison to deal with, without any of its benefits. In patients with profuse expectoration, cough must inevitably disturb sleep; hot drinks, helped by doses of some form of linctus, either tinct. camph. co., oxymel scillæ, syr. tolu, āā ℥xx. or diamorph. HCl gr. 1/6, terpene hydrate gr. 1/2, syr. ad ℥i. will give some rest during the night.

Pain in the Chest.

Pain in the chest is perhaps the most common complaint. It varies from the dull persistent ache or sharper pain on coughing (due presumably to underlying disease or muscle spasm), to the knife-like stab of pleurisy, or the sudden tearing pain of a pneumothorax. For the bronchitic complaining of soreness in the midline of the chest, especially on coughing, the application of liniments and the use of benzoin inhalations are usually sufficient. For the local pain of underlying disease the simplest remedies are often successful. Rubbing the chest with liniments or, if they are of no avail, painting with tinct. iodi mitis (or tinct. iodi fortis if the skin is not a sensitive one) can usually be relied upon to relieve the pain. Should it continue, however, a mustard leaf, a belladona plaster, or a kaolin poultice, can be used with a fair assurance of success. Pleurisy can be treated along the usual lines, but with extensive underlying disease and with a limited respiratory area it is wise to avoid extensive strapping owing to the increased dyspnœa it entails. The symptomatology of spontaneous pneumothorax in chronic tuberculosis is interesting. In the majority of my cases it was only discovered when the chest was examined for some slight pain or as a routine. The classical signs and symptoms arise only in the minority of patients. We have a patient at the moment who, in spite of the disability of an extensive pneumothorax, can work at his bedside industry with perfect comfort. Should symptoms be severe morphia is necessary to ease the pain and anxiety. If there is collapse a stimulant is of course indicated. With a gradually increasing escape of air into the pleural cavity, strapping or puncturing the chest may be necessary.

Ulceration of the Intestines.

The terminal enteritis often associated with advanced tuberculosis of the lungs is painful, exhausting and depressing, and therefore needs instant sedative treatment. The reduction of diet, to milk if need be, is not a serious matter, since loss of appetite is usually a prominent symptom by the time that diarrhœa has occurred. Slight increase of foodstuffs which have little residue can be given as the patient demands more food if the condition of the intestines allows. Warm applications to the abdomen in the form of hot bottles definitely mitigate pain and promote comfort. For ulceration of the small intestine bismuth mixtures can be tried first either alone or combined with Dover's powder, tinct. chloroformi et morphinæ co. 1914 ℥x. or tinct. opii. ℥x. Mineral astringents combined with opium can be tried, but the best mixture is mist. cretæ co. B.P.C. ℥i. with or without tinct. opii in ℥v. doses every four hours during the night and day. The dosage of opium can be regulated according to the severity of the diarrhœa. Even if it is pushed to the point of constipation there are enemas at hand to relieve. For the large intestines, starch and opium enemata combined, if need be, with opium by the mouth gives the most satisfactory result. These measures are sedative and purely palliative.

It is worth noting that in New York a mixture of cod-liver oil and tomato juice has been used in the treatment of both early and late cases of intestinal tuberculosis complicating phthisis. It is served ice cold after meals in the proportion of 3 oz. of juice to ½ oz. of oil; it is worthy of trial.

Digestive Disorders.

The question of appetite needs no comment, except the obvious one that the food should be as good and as palatably cooked and served as possible. Every passing fancy of the appetite is, of course, difficult to satisfy in institutions where dietetic limitations are unavoidable. But much can be done by a resourceful and enterprising staff to meet the various tastes half-way. This and a timely use of some mixture such as liq. strych. hydrochlor. ℥v., acid hydrochlor. ℥xv., glycerin ℥xxx., inf. gent. co. ad ℥i. will usually improve matters. Dyspepsia and kindred disorders need no special comment. Vomiting, however, is often a prominent trouble, and in so many cases follows severe bouts of coughing. If a sedative linctus is given just before or immediately after food, it is possible at least to lessen its frequency and sometimes to stop it altogether. In this and other types of persistent vomiting, tinct. iodi mitis ℥iii.–v. in water is often a considerable help.

Conclusions.

The treatment of these advanced cases of pulmonary tuberculosis is a psychological as well as a physical problem—neglect of the one aspect can only lead

* Part I. appeared last week.

to failure in the other. While some patients, unfortunately, resist both, the majority undoubtedly benefit from a judicious mixture of the two. The aim is to allow patients hopelessly diseased to slip out of life unawares as painlessly as possible, and to give the less advanced but incurable ones a moderately comfortable life by stimulating their various interests and by relieving their symptoms. Far from being wearisome and depressing these cases are full of interest, and the work, although admittedly exacting, is well worth the trouble it entails.

Only the treatment of those symptoms that, to my mind, are the most prominent and distressing have been discussed. There is nothing very original in the suggestions put forward. It is not implied that these methods are the only ones, but that they have been found the most useful.

I am indebted to Dr. C. R. Box and Dr. W. Burton Wood for their suggestions and to my colleague Dr. A. Burlingham for the results of his own experience.

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MEDICINE AND THE LAW.

Finger Impressions as Evidence of Identity.

AT the Birmingham Assizes in 1908 the judge advised a jury to disregard the finger-print identification of a man charged with burglary. It was proved that the finger prints of the accused coincided in no less than twelve of the ridges with those left by the burglar on a champagne bottle. Mr. C. A. Mitchell, in his book "The Expert Witness," justly cites the case as an example of the law-courts' reluctance to accept scientific evidence as conclusive. Last week at the Middlesex Sessions a less suspicious attitude was adopted. Two men had been disturbed while breaking into a house at Finchley and had escaped undetected. Finger marks were found on a broken window-pane (by means of which the house was entered), and, after reference to Scotland Yard, the accused man was arrested. This finger-print evidence, argued the defending counsel, was only secondary: "such presumptive evidence may be given as corroborative evidence, but I submit that it should not be given unless some really direct evidence has been given." He was over-ruled. The chairman of the Bench pointed out that the Court of Criminal Appeal has said that evidence of finger prints may be accepted even if it is the sole ground of identification. Archbold's Criminal Practice, the vade-mecum of the legal practitioner, quotes decisions given to this effect in 1909 and 1915, and adds a note of a ruling of the High Court of Australia. The latter authority refers to the fact that signatures have always been accepted as evidence of identity, and that, after all, finger impressions may be regarded as an unforgeable signature. It may be taken, then, that the individuality of finger prints is now judicially recognised and will not be dismissed as "scientific speculation"—the term used by Chief Justice Cockburn in 1857, when a medical witness gave evidence that a blood-stain upon a knife was human and not animal blood. In the past few weeks a police inspector stated at the Old Bailey that, in a case then before the court, palm-print identification had been employed.

Galton, interested in finger impressions as material for the study of heredity and anthropology, explained their value for criminal identification before a Home Office Committee in 1894. He showed that the chances of two persons having identical finger prints were about 1 in 64,000,000,000. According to the details in Mr. Moylan's book on Scotland Yard in the Whitehall Series, the system which Sir Edward Henry brought back from India, grouping patterns under four main types (loops, arches, whorls, and composites), was not adopted in England till 1901. But already, in 1896, Home Office regulations for the measuring and photographing of criminal prisoners had permitted measurements to include "the external filament of the fingers and thumb," an inked impression being so recorded "as to leave a clear print of the skin surface." At the end of 1928, writes Mr. Moylan, over 286,000 identifications had been effected through the Finger Print Bureau. So promptly does the index work that Scotland Yard undertakes to give a definite answer to a finger-print inquiry from anywhere in Great Britain on the same day as the inquiry is received. A method has been devised whereby finger prints can be described by cable or wireless telegraphy, so that in a few hours a man arrested in London can be identified with a criminal who is on the books of a police force at the other side of the world. The Scotland Yard register contains the prints of all persons convicted and sentenced for serious crime. Nobody can be compelled to allow his finger prints to be taken unless he is committed to prison. Under the 1896 regulations if an untried person, not previously convicted of crime, is photographed or measured and is afterwards discharged by the magistrate or is acquitted on trial, his photograph or measurements must be forthwith destroyed or handed over to him. The total of persons whose finger impressions are recorded in the Scotland Yard register seems to be about half a million. If judges and juries have now learnt to pay attention to the significance of this systematised information, so also have the criminals themselves. Mr. Moylan mentions, as an interesting fact from which an obvious conclusion can be drawn, that there are only three cases on record at Scotland Yard of a criminal being twice identified by finger prints left at the scene of the crime.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. J. M. Hayes is placed on the retd. list with the rank of Surg. Capt.

Surg. Lts. R. C. Foster and T. A. Cochrane to be Surg. Lt.-Comdrs.

ROYAL ARMY MEDICAL CORPS.

Lt.-Col. W. C. Smales retires on retd. pay.

Maj. (temp. Lt.-Col.) G. F. Dawson to be Lt.-Col.

Maj. J. A. Renshaw to be temp. Lt.-Col.

Maj. L. C. Hayes, Reg. Army Res. of Off., relinquishes his appt. under Art. 520 (*b*), Royal Warrant for Pay and Promotion, 1931.

Capt. J. B. Cargin relinquishes his temp. commn.

Lt. D. A. Langhorne resigns his commn.

H. E. Hodge is granted a temp. commn. in the rank of Lt.

TERRITORIAL ARMY.

Capt. J. Rowland to be Maj.

Lt. J. H. Dunn to be Capt.

INDIAN MEDICAL SERVICE.

Capt. P. N. Lahiri to be Maj.

ROYAL AIR FORCE.

I. Bannerman is granted a short service commission as a Flying Officer for three years on the active list.

OPENING OF THE MEDICAL SCHOOLS

LAST week saw the opening of the London medical schools, and at most of them the session began with a formal ceremony. Our last issue contained part of Prof. McIntosh's lecture at Middlesex Hospital on the Infinite Invisible in Medicine. Below we print extracts from two other addresses delivered by medical men. Prof. Dean spoke at King's College Hospital and Sir Farquhar Buzzard at Guy's.

MEDICINE AND OTHER SCIENCES.

BY H. R. DEAN, F.R.C.P.,
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF CAMBRIDGE.

Medicine is as old as man and medical science as old as history. Indeed, no science is so old as this our science of medicine, the mother of all branches of natural science. One by one the sciences have been born of mother medicine, chemistry and physics, botany and zoology, anatomy and physiology, and in these later days pathology and bacteriology. In the unending search for better means for the maintenance of health and for the cure of disease new lines of thought and new ways of work have been opened up, new sciences have been born. To medicine the sciences owe their origin, and it is fitting that the daughter sciences should, in their turn, make, as they do, contributions to the advancement of medicine.

CLASS CONSCIOUSNESS IN SCIENCE.

In these days when knowledge has multiplied so greatly that no one man may venture to study more than one branch of it, in these days it has become the fashion to divide the sciences into two groups. The branches of science in one of these two groups are called applied or vocational. The branches of science in the other group are styled the pure sciences. Moreover, it is held or implied that the so-called pure sciences are in some way higher or more intellectual than the so-called applied sciences. Again within the group of pure sciences some are said to be exact and we must suppose that the sciences which do not come under this heading must be held to be inexact sciences. Of the exact sciences, mathematics is considered to be the most exact, although even in this science a distinction is drawn between pure mathematics and a presumably somewhat impure variety called applied mathematics, for it seems that science loses caste and becomes impure if it is clearly proved to be useful. Now in this hierarchy of the sciences mathematics claims first place, and then come the so-called exact sciences of physics and chemistry, and then botany and zoology, inexact perhaps, but still pure and finally, after the branches of pure biology are ranked, the branches of applied biology, branches of science openly, avowedly, even shamelessly, concerned with the study of disease such as pathology, or with the study of the cure of disease such as medicine or surgery. In this classification it may be that I have put too much stress on class distinctions which are felt more often than they are expressed. But all, I believe, who have work in any branch of what we call the natural sciences are aware of this class consciousness in science.

Nevertheless, we who work and teach in some branch of medicine may perhaps wonder what these differences may be which distinguish certain sorts of knowledge as exact and purport to divide the sciences into two groups, the pure and the applied. How do the researches of Pasteur fall short of the exact? Is it possible that the discoveries of Lister were contributions to science less pure from the greatness of the benefits which they conferred so directly and so immediately on man? In what respect is abnormal biology less pure than normal biology? How is the study of a sick man less purely scientific than the study of the cockroach in good health? Nor will I admit that the pursuit of knowledge for knowledge sake must be held a higher and a nobler task than the pursuit of knowledge for the sake of the benefit which such knowledge may bring to our fellow men.

THE MOTHER OF ALL SCIENCE.

The medical sciences form one great group within which no branch of science may claim to be purer or more exact than any other. For medicine the mother of all sciences, or of most of them, has need of all her daughters and cannot afford to let the work of any one of them go unheeded. For no investigation of the principles of physics or of chemistry or of any branch of biology can be so aloof or distant from material ends that it may not at any time yield results which may at once revolutionise the practice of medicine. Nor can any man who sets out with no other aim than the improvement of some small practical method for the care of the sick be sure that he will not by his work provide the answer to some fundamental problem greater far than the original object of his search. For science is one and not to be divided, and each man may see as much as he can from his own point of view, but he cannot see it all. So the medical man looks out from his point of view, which is medicine, and sees all other branches of science grouped all round medicine and touching medicine, and hardly, if at all, to be distinguished from medicine. For the medical man all science is medical science, and as the complete physician must know all science, the complete physician does not exist. Yet hard though it is for any one man to gain acquaintance with more than one of our medical sciences, I am convinced that progress may best be made where men with different points of view and with a knowledge of diverse methods will work together. The study of disease is a common interest which unites us all, whether we work in wards or in laboratories. For pathology may be and should be studied in the wards, and medicine and surgery in the laboratory. Nor are the aims of those who study disease with a microscope at all different from those whose methods are called chemical and who work with a test-tube.

AN OBSTACLE RACE.

To-day close association between all the branches of medical science and close coöperation of workers in all the medical sciences is vital for the progress of medicine, and it is very hard to achieve. This problem of correlation confronts everyone of us from the moment when we enter the medical profession. It is the problem alike of the student, the research worker, and of the teacher. The student in the long years of his apprenticeship is confronted by a series of courses in the various branches of the medical sciences, courses which are detailed and specialised and which have become and tend to become more detailed and more specialised. For each branch of medical science is growing rapidly and there is in

each subject more to teach and more to learn, and the teachers must be specialists and must devote all their time to their subject. So it happens in some subjects that medical students are taught by teachers who have no knowledge of medicine and consequently no first hand knowledge of the problems which await their pupils in the later stages of their career. And each field of knowledge, in which every student must browse for a little while, is separated from the next by a fence or examination. I do not think that we ought to be surprised if students feel that they have to complete a long cross-country race and surmount several rather tiresome obstacles before they are allowed to enter the promised land of medical practice.

THE UNITY OF MEDICAL SCIENCE.

It is not without significance that we have come to call chemistry, physics, botany, and zoology the preliminary sciences, a term which seems to imply subjects which must be completed and may be forgotten before the study of medicine is commenced. With the growth of science specialisation has become inevitable, and there can be no return to the days when each subject might be in the hands of a teacher competent to combine some branch of laboratory science with the duties of a physician or surgeon to a hospital. In these days teachers of chemistry, physics, botany, and zoology seldom hold medical qualifications, and physiologists, anatomists, and pathologists, the majority of whom have had some medical training and experience, must devote so much time to their own branches of science that they find it hard to keep in close touch with the ever-growing advances of clinical practice. The growth of the medical sciences during the last 100 years has been enormous, and the rate of growth during the last 30 years in nearly all subjects has shown a remarkable acceleration. The students of to-day have better opportunities and facilities for learning their work, especially laboratory work, than their predecessors of 30 years ago. There is more and better organised teaching than there used to be, and students are expected to attain, and, in fact, do attain, a higher standard in each of their too numerous examinations. Alterations in the curriculum there have been, but these alterations have taken the form, as a rule, of an increase in the syllabus and an extension of the hours of study which must be spent on some one subject. The various science departments have competed with one another for the few remaining free hours in the student's week and time for private study has been progressively diminished. Nor has this rivalry in the staking out of claims to the student's time been limited to the laboratory subjects, for the demands of teachers of the more specialised branches of clinical medicine and surgery for compulsory lectures, hours of attendance, and even special examinations, have been and are increasing. We cannot expect the medical student to be a specialist in every branch, and it is getting very difficult for the student to put together all the little bits of the jigsaw puzzle into which the composite but once harmonious picture of medical science has been dissected. If, as I suppose, the students of to-day are more regularly taught and have better opportunities for practical work than students of the past, I wonder why it has been thought necessary to increase the hours of compulsory attendance, the numbers of compulsory lectures, and to enforce, with increased severity, the system by which signatures are required for every course prescribed. "To be signed up" may soon become the student's main objective. Does the necessity for all these signatures lie in the fact that students are expected to attend not only more classes than they would attend without the "sign up" system, but actually more classes than can be attended with profit during the average span of student life? One of the most serious changes which have taken place has been the handing over of the basic medical sciences of chemistry, physics, and zoology to the public and secondary schools. The teaching of these subjects in many schools is excellent, but the change of place in which instruction in these subjects is given will make it much more difficult for us to achieve the coördination and correlation of all the many branches of medical science which is badly needed to-day, and is, in fact, long overdue. Moreover, few can afford to devote one or often two years of school life to specialised preparation for medical examinations, without some loss of the advantages of the broad and general education which boys destined for other professions are free to obtain.

The time has come for us to put our house in order and to coördinate, if we can, the various fragments of the medical curriculum. In the process of reconstruction the majority of subjects will need pruning and some may have to go altogether, for the student is overworked and over-examined. But cutting down or cutting out will not be enough, and we shall not make things very much better until we can recapture the ideal of one great medical science or at least of one great group of medical sciences using different methods, but united and welded together by one common purpose.

THE GENERAL MEDICAL COUNCIL.

By Sir Farquhar Buzzard, Bt., F.R.C.P.,
REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

The Medical Acts do not prohibit the practice of medicine by unregistered persons, although the latter are handicapped by not being able to sue for fees in a court of law, by being unable to give valid certificates required by any Act of Parliament—such as a death certificate—and by being ineligible for appointments as medical officers in the Services. In other words, any one can practice medicine and surgery, provided that he does not deceive his patients by falsely representing that he has qualifications to which he has no title, or that he is registered when such is not the case.

The General Medical Council has no power to erase the name of a practitioner from the Register if he adopts any theory in his practice, however contradictory to the principles in which he has been trained. For instance, he may practise homœopathy, osteopathy, naturopathy, chiropractic, sanipractic, and all the other pathies and practics which, during the short tenure of their lives, feed on the pathetic credulity of mankind. It is quite a good rule, on general principles; the only comment one has to make in that regard is, that it enables a medical practitioner who has passed through the orthodox medical training and who has, presumably, acquired a large amount of scientific knowledge, and perhaps a certain degree of critical faculty, to adopt some "pathy" for the purpose of practice, in which he can express his belief. That is a practice which is, no doubt, advisable from the point of view of the public, but, knowing what the public are, knowing their love of something which is not quite orthodox, it is certainly open to abuse.

"COVERING."

The fifth clause in the Council's Warning Notice states:—

"Any registered medical practitioner who, either by administering anæsthetics or otherwise, assists an unqualified or unregistered person to attend, treat, or perform an operation upon any other person in respect of matters requiring professional discretion or skill, will be liable, on proof of the facts, to have his name erased from the Medical Register."

It is difficult to believe that action by the Council in respect to such cases should lead to the abuse of that body. The law requires that in order to be duly qualified to practise medicine and surgery a practitioner must pass through a long training and severe tests in the form of examinations by recognised licensing bodies. If an unqualified person, without such training and without any scientific knowledge of disease, sets up to cure confiding members of the public he is at liberty to do so. If, on the other hand, he desires for the purpose of curing his patients to render them temporarily unconscious, he needs the services of an anæsthetist.

Now the giving of anæsthetics requires considerable skill and experience on the part of the anæsthetist, and is not free from danger to the patient. The unqualified practitioner naturally seeks for a qualified person to give his anæsthetics in order to escape the serious consequences which would arise if a patient were to die under an anæsthetic administered by an unqualified person. Moreover, the presence of a duly qualified medical practitioner taking part in an unqualified person's treatment conveys a sense of safety to the patient and suggests to the latter that the treatment which is carried out while he is under the influence of the anæsthetic must necessarily be competent and skilful. The registered medical practitioner who is paid by an unqualified person to assist him in his practice, by giving anæsthetics or otherwise, can hardly complain if he finds his name is erased from the Register. As a matter of fact, practitioners who adopt such methods of making their living are not, as a rule, disturbed by finding themselves off the Register. They usually continue such practice and receive a certain amount of adulation from the public who regard them as martyrs to their sense of independence.

ADVERTISING.

The Warning Notice says that:—

"the practice of advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting his own professional advantage; or for any such purpose, of procuring or sanctioning or acquiescing in the publication of notices commending or directing attention to the practitioner's professional skill, knowledge, services, or qualifications or depreciating those of others; or of being associated with or employed by those who procure or sanction such advertising or publication is in the opinion of the Council contrary to the public interest and discreditable to the profession of medicine, and any registered medical practitioner who resorts to any such practice renders himself liable, on proof of the facts, to have his name erased from the Medical Register."

This question of advertising is a very difficult one for the Council to deal with, and there can be little doubt that it occasionally comes to wrong conclusions. When it does so, it has generally erred in the direction of leniency. The Council does not initiate inquiries into the conduct of practitioners in relation to advertising; it awaits complaints, and if these seem reasonable it orders an inquiry.

Let me give you an imaginary example of the kind of case which the Council has to consider.

Some unknown genius, without the handicap of a medical training, discovers a cure for all diseases of the heart or the stomach. Now cures are more effective in these days if they involve the use of a syringe and a needle, and you can charge more for one hypodermic injection than you can for several bottles of medicine. But hypodermic injections require some small amount of professional skill and the employment of a duly qualified medical practitioner for their administration is impressive and protective. The cure is widely advertised in the press: the usual story—"after trying many doctors without result, &c." Little paragraphs appear in the news columns and quite a crowd of chronic dyspeptics find their way to a second floor room in some well-known street where the duly qualified medical practitioner in a long white coat punctures them at a guinea a time, paid in advance. The case of the practitioner is brought before the Council, who decide that he is guilty of infamous conduct in a professional respect and direct the Registrar to erase his name from the Register. The fat is then in the fire. The paper or papers in which the advertisement had appeared rise up in their indignation and wrath, and roundly abuse the General Medical Council of trades unionism of a hush-hush policy, of preventing the public from recognising and enjoying the benefits of a wonderful discovery, and so on.

I suppose the trouble all arises from the fact that advertisements and advertising are the life-blood of the press. They could not exist without it. It is inconceivable, according to their lights, that there should be anything wrong or infamous in advertising, and what would happen to the public if the whole profession started advertising is a question they have never had time to consider.

It is a question, however, worthy of consideration. Suppose for a moment that we should all be expected, in order to keep ourselves before the public, to have at least one advertisement a week in the papers. Suppose for a moment that coming down to hospital you opened your mid-day special and found "Hurst for Hiccup," or "Fagge for Fractures," staring at you in large type next to "Pink Pills for Pale People." After all it is only a matter of degree, and once the principle of advertisement is admitted there could be no drawing the line. It might lead to more money flowing into the pockets of the profession, but would it benefit the public? I think the answer is no, and it is for that reason that the General Medical Council have issued a Warning Notice, not because they have adopted a hush-hush policy or wish to damp the enthusiasm of untrained geniuses in their endeavours to cure their fellow creatures.

SLIPPERY HOSPITAL FLOORS.—A second fatal accident has occurred at Tooting Bec Mental Hospital in consequence of the slipperiness of the floors. A female patient slipped as she was getting out of bed, fractured her thigh, and died of hypostatic pneumonia. At the inquest Dr. P. M. Turnbull, the medical superintendent, stated that since a similar happening a short time ago the floors had been made less slippery, and that experiments were still being continued with patent dressings.

HOSPITAL EXTENSIONS.—Last week Alderman G. Marlow Reed, chairman of the Middlesex county council, opened a radiological pavilion, which has cost nearly £20,000, at the North Middlesex County Hospital at Edmonton, and Mrs. Reed opened an extension of the nurses' home which has cost £54,000.—The Mayor of Wandsworth last week opened the new maternity home (20 beds) attached to the Weir Hospital, Balham.—Mr. J. R. Phillips, the hon. consulting surgeon, has officially opened extensions to Bingley Hospital which include a new casualty receiving department.

POST-GRADUATE LECTURES

AT several of the London teaching hospitals short courses for old students and other graduates have lately been in progress. The following are summaries or parts of lectures delivered at Charing Cross (Dr. Hamilton, Mr. Daniel, and Mr. Broster), Westminster (Dr. Abrahams), St. Mary's (Mr. Bourne), and Charing Cross (Mr. Bright Banister).

TREATMENT OF BRONCHO-PNEUMONIA IN CHILDHOOD.

(DR. C. K. J. HAMILTON.)

Good nursing is of incalculable value, and every effort should be made to secure a suitable nurse. Excess of relatives is always to be avoided.

Fresh air will do more to save the child's life than any other single factor. Provided the weather is not bitterly cold, the infant may with advantage be nursed on a balcony. In practice, this will seldom be possible, but at least one must insist on really open windows—that is, windows opened as far as they will go, top and bottom. As a rule, the steam tent and kettle are definitely harmful; personally I am never in favour of their use, but they are still recommended by some authorities where there is spasm of the bronchi or much laryngitis. In these cases tinct. benzoini co. (1 drachm to 1 pint) is added. The kettle should anyhow not be used for more than one hour at a time.

The child should be clothed in light warm clothing; over-clothing and too heavy bedclothes are frequent causes of restlessness, and nothing can do more harm to the child than this. The mouth must be attended to frequently both after and between feeds. A simple alkaline lotion, such as sod. bicarb. (1 drachm to 1 pint) is suitable; preparations containing glycerin are to be avoided, because in the long run they tend to make the mouth too dry. The nose must also receive frequent attention; in many cases a chloretone spray will be of value to older children, and will encourage nasal breathing.

Diet.—If the infant is breast-fed every effort should be made to keep it on breast milk. The mother's breasts must be emptied at regular intervals; this is best done by manual expression, but if necessary a breast-pump may be employed. The milk is given to the infant by a spoon or pipette, or where there is great prostration œsophageal feeding may be used with advantage, great care being taken not to give the food too rapidly. With bottle-fed infants the aim should be to supply an easily digested mixture. As in other fevers, fat is not well tolerated, and mixtures such as half cream dried milk should be used. The protein content of the food may be kept fairly high, provided that it is given in a digestible form such as dried milk, condensed milk, acid milk, or peptonised milk. The sugar content should be high. Sugar is best given in the form of glucose or glucose and dextrin. The only danger in a diet with a high sugar content is that it may cause diarrhœa, and in order to obviate this as far as possible a high protein content should be given at the same time. Feeds should be smaller and rather more frequent than usual.

The general principles in the feeding of older children are that the feeds should be small, easily digested, with rather a high carbohydrate and a low fat content. Over-distension of the stomach must be rigidly avoided. Glucose again is very valuable, and older children will often take it as a drink made with lemon or orange juice. Benger's food, barley water, rice water, and jelly are all valuable. Toast, biscuit, and thin bread-and-butter may attract the child, and certainly no easily digested solid food should be refused if asked for. Beef tea, soups, and meat juices have little, if any, nutritive value, and merely serve as media for the administration of other food—for example, milk soup, or soup with cereals added.

Local applications.—A heavy poultice tied firmly round the child's chest will go a long way towards killing it. If any external application is desired a small light application of antiphlogistine may be placed on the back of the chest. Under no circumstances should it surround the chest, for that must necessarily make breathing more difficult.

Drugs.—Expectorants play very little if any part in the treatment of broncho-pneumonia. In the early stages if there is a troublesome dry cough a simple alkaline mixture with potass. citrat., and, say, syrup of tolu, may be given at the same time as frequent warm drinks. In the later stages, where there is an excess of secretion, belladonna may be tried with a view to lessening the secretion (℥ 4 or 5 of the tincture four-hourly to an infant of 5 or 6 months). Belladonna may sometimes make the child restless, and this must be carefully watched for, since it will do great harm.

If there is restlessness through cough or pain, tinct. camph. co. may be of real value. It can conveniently be given in the form of a simple linctus (℥ 4 or 5 every three or four hours for a child of 4 months). Morphia and heroin are usually best avoided. A child of 5 years may be given Dover's powder grs. 5. Where there is no definite evidence of pain, bromides may be successful in securing quiet sleep. In young infants a dose of ℥ 30–60 of brandy will often produce quiet sleep. Whether digitalis should be given is a matter of dispute; if it is going to be given at all it must be started in the early stages with a view to protecting the heart, ℥ 2 to 3 may be given to an infant three times a day. The routine use of the so-called stimulants such as camphor, caffeine, and strychnine has little to recommend it. With collapse and a falling blood pressure injections of adrenalin may possibly assist in tiding over an emergency.

Every effort must be made to save the heart, and to this end it is very important to secure good sleep and quiet. If the restlessness or sleeplessness is due to pain, pulv. ipecac. co. may be tried in older children and tinct. camp. co. in infants.

The regular use of brandy is a debatable subject. I personally think that its regular administration may be of some slight value. It may be given in doses of from 10 minims every three to four hours in small infants to 1 or 2 drachms in older children.

Oxygen is of very definite value, but its employment must not be postponed until the patient is in extremis. It should be bubbled through warm water before reaching the child. Masks, although theoretically good, usually cause struggling and are consequently to be avoided. The introduction of the oxygen into the nasopharynx by means of a thin rubber catheter passed along the floor of the nose is an excellent method, if it does not annoy the child and

make it restless. In practice one has frequently to fall back on the funnel; if this is used it should be large in proportion to the size of the infant's face, and should be held right over the face. Oxygen should be given continuously for about 10 minutes in each half-hour or 15 minutes in the hour.

Bleeding and *leeching* are not often employed these days, but I think that in certain cases, with symptoms of right-sided heart failure, the application of three or four leeches, followed by hot fomentations, may be of definite value.

SLOW LABOUR.

(MR. ALECK BOURNE.)

Slow labour should be measured not in time but in terms of the condition of the mother and child, and the rupture of the membranes. There are three varieties of slow labour which may cause anxiety. The first is that in which the delay is occasioned by the slow initial dilatation of the os; usually the dilatation reaches about two fingers, and then comes to an apparent standstill. In the second variety the os reaches two-thirds or three-quarters of full dilatation before it comes to a stop; and the third variety is that in which full dilatation has been reached for some time, and yet there appears to be no progress.

The causes of delay in these three varieties are fundamentally different. In the first case, where the os is two fingers' dilated, the pains may appear to be either feeble or strong. It is not sufficient to say that early rupture of the membranes alone is responsible for these cases, nor do I believe that a rigid os is the explanation except very rarely. The common cause of the delay is inadequacy of the uterine forces. Graphs taken during labour by the introduction into the uterus of a rubber bag containing water show that normally regular contractions are interspersed with regular periods of relaxation; graphs taken in cases where there is delay of this type show irregular contraction and relaxation without any of the powerful rhythm found in normal labour. Yet the clinical symptoms may be exaggerated, the patient experiencing more pain than the woman in whom the contractions are normal. I believe this may be due to incoördination of the uterine muscle-fibres; in the normal woman the longitudinal fibres contract and expel the baby; in primary uterine inertia the circular fibres contract and the baby is merely squeezed. I do not believe that a rigid os is responsible for the delay; the condition may remain unchanged for hours, and then, perhaps following an enema, the os may dilate rapidly in an hour or two. Such behaviour is not compatible with the conception of a rigid os.

In the patient in whom the os is two-thirds dilated before the delay begins the cause is nearly always the posterior, unrotated position of the head. Where delay of this kind occurs an anæsthetic should be given and an examination should be made, not with the finger but with the whole hand. In the third variety, where the os is fully dilated and progress has ceased, the cause may sometimes be disproportion, but commoner causes are a persistent occipito-posterior position and weak uterine contractions. In actual practice disproportion plays a small part. Persistent occipito-posterior presentations form one of the most important causes of maternal mortality and morbidity, and of fœtal mortality and distress.

In considering treatment it is useful to remember that in the majority of cases no harm can come to mother or child while the membranes are unruptured. The mother may suffer from fatigue but not from physiological exhaustion; it is usually sufficient to give sedatives, and to do nothing more until the rupture of the membranes. Where there is delay after the membranes have ruptured there is danger of infection, of œdema of the os, and compression of the baby. The uterus should be studied by keeping the hand on it for at least ten minutes to decide whether the contractions are normal or weak and irregular. If they are weak it is safe to give 2 or 2½ units of pituitary, and this often has the effect of converting feeble contractions into the steady powerful contractions of normal labour. More than 2½ units of pituitary are dangerous, but that small dose is safe even in the first stage of labour; it should not be given until the behaviour of the uterus has been carefully studied. If the patient is restless and complaining, sedatives may be administered instead. Morphia gr. ¼ may be given, with or without hyoscine gr. 1/100; the hyoscine may be repeated in a dose of gr. 1/200 after an hour. Chloral may also be useful, and sometimes good results are obtained by giving pituitary extract as well as sedatives. An enema may alter the whole picture. In those cases where dilatation really fails to occur the mortality reaches 80 to 90 per cent., but they are extremely rare.

Treatment of a persistent occipito-posterior presentation consists in rotation and the application of forceps. Where signs of pressure are found on examination, such as an œdematous anterior lip of the cervix and a large caput succedaneum, there is probably some disproportion. If this is mild, forceps may effect delivery, but if it is severe craniotomy is usually necessary. When the os is fully dilated before the onset of delay the absence of œdema on examination means that there is no contraction of the pelvis. In all cases of delay four possible causes should be taken into consideration: inadequate pains; a posterior position of the head; pelvic disproportion (rarely); and a rigid os (almost never).

COMMON ANAL AND RECTAL LESIONS.

(MR. P. L. DANIEL.)

The practitioner frequently encounters the patient who complains of discomfort in the rectum. The cause of such discomfort may be anything from cancer to piles, and the diagnosis can nearly always be made by feeling and looking. If the anus is round and puckered instead of an elongated slit, some painful condition is present. Red and sodden rugæ indicate pruritus, and pendulous rugæ indicate piles. A small tender tag of skin posteriorly is usually the so-called sentinel pile of a fissure; if the fissure is low down it can be seen by stretching the anal canal, but if it is higher it can be neither seen nor felt. Fissures may be chronic and hard, or slight and intermittent. Pruritis may be associated with a fistula; the introduction of a probe into the opening will show that the fistula leads towards the anus. Condylomata are nowadays rare, but papillomata are common, especially in dark people, and have no significance. Differentiation must be made between the prolapse of a pile, a polyp, or the rectum itself.

On rectal examination the internal opening of a fistula may be felt, lying between the external sphincter and the levator ani. Introduction of a

finger into the anal canal should be painless, so that any complaint of pain should lead the examiner to think of a high fissure. Higher up, the cervix uteri or the prostate can be felt, and either may be mistaken for a tumour by the inexperienced. Above the pile area a polyp may be found, and can be brought down by sweeping the finger round to ensnare the stalk. Piles are not palpable unless thrombosed. Folds of mucous membrane may be felt in the rectum, and these may be so voluminous as to occasion a stenosis; I believe this condition to be a precursor of cancer, and we are nowadays securing good results by injection of the folds. Perianal thrombus, due to strain, is not infrequently seen; it is not a pile, and should be treated after the fourth day by incision and removal of the blood clot.

Strain is also the chief cause of thrombosis of piles, and is usually associated with constipation, which should, of course, be treated. Plenty to drink and mild laxatives such as cascara and senna are useful; paraffin should be used intermittently, since it leads to constipation, and emulsions containing laxatives and paraffin should be avoided; in such a form the dose of neither can be controlled. For inflamed piles suppositories of extract of hamamelis grs. iii., and extract of belladonna gr. ¼ are valuable, and should be introduced on waking. Vaseline should never be used to coat the suppository, for it is impermeable and the drugs cannot take effect. Fissures should be treated by arranging that the patient shall defæcate once a day, and by keeping a clean dressing in the fissure. A sentinel pile should be snipped off; the wound heals readily as a rule, and healing will often carry on into the fissure. Operative treatment is required for high fissures.

Prolapsed piles should be replaced and afterwards the patient should be made to lie down for a quarter of an hour with the buttocks elevated. Prolapse of the rectum is extremely difficult to cure, and tends to recur even after extensive excision. The treatment of fistula is best undertaken in hospital, but polypi may be removed under local anæsthesia. Pruritus is best treated by the general practitioner, who must correct constipation and treat the local dermatitis; the patient must wear a dressing in close contact with the anal canal. Excoriations can be touched with silver nitrate, and carbolic and glycerin makes a good lotion for use on a gauze dressing. The injection of Benacol or any thick oil, such as liquid paraffin, often relieves the pain and irritation produced by a fissure for several months, but the patient must be made to wear a dressing all the time, none the less.

Colitis is another condition which the general practitioner is not infrequently called upon to treat. Surgical intervention should be avoided at all costs. Castor oil is a specific remedy, if used judiciously, whether the condition is associated with diarrhœa or constipation; a teaspoonful of the oil should be given in the morning on alternate days. If no action is produced on the first day a gentle enema should be given on the second, consisting of about 30 ounces of an emulsion of olive oil and some bland soap. Not more than eight doses of castor oil should be given altogether, and in some cases good results are obtained by giving emetine hydrochloride, gr. ¼ to gr. ½, on alternate days for the next 16 days. Irritants like brown bread should be avoided. Where these methods fail washing out is valuable, and kaolin and paraffin are also useful.

RECENT ADVANCES IN THE TREATMENT OF FRACTURES.

(MR. L. R. BROSTER.)

Since the war the treatment of fractures of the limb bones in this country has largely depended on the use of the Thomas and Robert Jones splints. During a recent visit to Scandinavia I was struck by the complete difference of the methods of treatment used there, and to contrast our methods with theirs may be of interest. The use of plaster is the only form of treatment which we have in common with their surgeons, and it is significant to remember that Sweden and Denmark were non-combatants during the war, and have consequently founded their treatment upon a different experience from ours. Their hospitals are all controlled by the State or commune, and are lavishly built with fine grounds and excellent equipment. All patients are admitted to hospital for treatment, and the hospital staff consists of a professor with four to six assistants under him. Young men entering the medical profession have nothing to work for but a professorship, and these appointments are naturally few. The result is that entries to medicine have dwindled.

In the treatment of fractures so long as the method employed fulfils certain postulates it will be satisfactory. It is necessary, in the first place, to correct the displacement produced by the fracturing force, but this displacement is modified by other factors, such as the pull of the muscles, the weight of the limb, the action of gravity, and the pressure of effusion. One of the actions of the effused blood clot is to distend the deep fascia which encases the muscle mass, with a resultant shortening of the limb. To correct the displacement due to the fracturing force we attempt by manipulation to retrace the force and direction of the violence, and in order to avoid the effects of muscular spasm we give a general anæsthetic to secure relaxation. On the continent, however, they make use of an injection of 2 per cent. novocain to obtain this muscular relaxation; a long needle is used for this purpose, and the injection is made into the blood clot between the fractured ends of the bone. The Swedish surgeons claim that with the disappearance of the pain the limb becomes amenable to reduction. In this country the force of gravity and the weight of the limb are usually met by some method of fixation, either plaster or splint. After reduction, to correct the muscular pull and the shortening due to the tension of the deep fascia over the effusion, we use some method of extension by traction with weights. In Sweden this traction is secured by driving a strong steel wire through the distal part of the fractured bone and fitting this to a calliper attached to a pulley. Such a wire can be passed through the condyles of the femur, through the os calcis, the tibia, the olecranon, or the ulna. It provides a stable method of securing traction. The only objection appears to be the danger of sepsis round the pin, and in practice this does not seem to arise. Plating and bone-grafting are not employed in Sweden, and the surgeons maintain that all fractures can be reduced by the measures just described. The limb is kept up from two to four weeks longer than we usually consider necessary in this country, and no massage is employed. On the other hand the patient is encouraged to use the other joints of the limb, and in the case of a fractured femur is provided with a string attached to his foot by which he can

flex and extend the ankle and even raise the leg by extending the knee. Massage, they believe, disturbs the fragments and produces pain and spasm.

With compound fractures their practice is to cut away the infected parts and to suture the wound. They claim that sepsis will disappear because in a properly reduced and immobilised limb there is no room for blood clot where sepsis might be harboured. They believe non-union to be very rare in fractures treated by their methods, and claim that this is due to the complete immobility secured. This is directly contrary to the teaching in this country, where it is held that a slight amount of movement is essential to union; the ready union of the ribs, which is usually cited in support of this view, they ascribe to the rich blood-supply, and not to the mobility of the thorax. It seems hard to believe that anything but fibrous union can occur with a spike fracture over the point of which a flap of periosteum has fallen, but they maintain that we do not succeed in reducing them properly. I do not agree with this view, but believe that operation must always be necessary for fractures of the patella and olecranon, which are commonly of this type.

HEADACHE.

(DR. ADOLPHE ABRAHAMS.)

Probably there is no symptom encountered in any kind of practice which surpasses headache in the multiplicity of causes which may be responsible. In its intensity, headache may vary from a sensation of misery which hardly deserves the description "ache," to a lancinating unbearable neuralgia for which relief is insistently requested; but I do not think that in respect to differential diagnosis much, if any, value attaches to the various types of pain or the various situations of the head which may be affected. Some people appear to have a natural immunity, and never suffer from headache. In others the most trivial cause may be responsible; and little light on the phenomenon is cast by the realisation that the cortex of the brain is insensitive. It is said that headache originates in the dura mater, the nerve-endings of which may be irritated by pressure or inflammation, and although a considerable number of cases will be encountered in emotionally disposed subjects of chronic headache which can hardly be explained on these lines, it may be stated as a general proposition that anything which can cause hyperæmia of the dura may produce headache.

CRANIAL AND INTRACRANIAL CAUSES.

Proceeding from without inwards we may consider:

1. The *scalp*.—The so-called rheumatic headache is due to a fibrositis in this situation, and I believe that much of the success of "spinal manipulation" at the base of the skull may be attributed to dispersal of the nodules, although admittedly a vascular element cannot be excluded.

2. The *skull*.—Blows, fractures, and new growth of the calvaria. Periostitis and caries, generally of syphilitic origin. The teeth are also to be included in this group.

3. The *meninges*.—Acute meningitis, the chronic meningitis of G.P.I., and subdural abscess. Meningismus may be included here, the severe headache closely simulating meningitis in some acute conditions, or even constipation, in which lumbar puncture with the escape of a quantity of clear cerebro-spinal fluid under pressure gives rapid relief. The headache which sometimes follows lumbar puncture is explained as due to leakage following the puncture, which may be avoided by the use of a very fine needle. The unsupported brain falls upon the basal dura mater, the falx and tentorium are stretched. The inexperienced, alarmed at this sequel of lumbar puncture, and fearing meningitis, naturally repeat the puncture, which is the very worst treatment in the circumstances.

4. The *brain*.—Encephalitis, tumours, including gumma, abscess, innocent and malignant growths. Intermittent swelling of the pituitary gland has been advanced as a cause of migraine. Concussion, with which meningeal hæmatoma is often associated, and other vascular causes, such as thrombosis or aneurysm.

5. The *nose, orbit, and accessory sinuses*.—Iritis and sinusitis may be responsible for a so-called brow-ache, naturally described by the sufferer as headache.

EXTRACRANIAL CAUSES.

1. *General diseases*.—The venous hyperæmia of cardiac disease. The headache of chronic renal disease may have a vascular or a toxic origin. In anæmia, too, toxic as well as circulatory causes may be at work. It is customary to accept both high and low blood pressures as productive of headache, but it is at least as likely that the underlying cause of the abnormal pressure is the responsible factor.

2. *Toxic causes*.—This is a very large group, and indeed an indefinitely large one. The number of toxins which are capable of producing a headache is unlimited. Commoner ones will be comprised under:

(*a*) *Endogenous*.—The headache of fevers, anæmia, cholæmia, gout, diabetes, and of copræmia with its hypothetical auto-intoxication. Calcium deficiency appears to be responsible for a peculiar form of headache, though in this case the altered coagulability of the blood suggests a physical rather than a toxic cause. The headache of menstruation may come into this category.

(*b*) *Exogenous*.—Poisonous gases, foul air. Many drugs: those with the worst reputation are opium, quinine, lead, alcohol, and tobacco.

3. *Reflex causes*.—Eyestrain, nasal obstruction, carious teeth are the commonest. But in a susceptible subject many others may be included—e.g., ovarian disease, and probably constipation, in which the colonic distension has a reflex action. Too tight or too heavy a hat, and an excessive weight of hair have sometimes been responsible.

4. *Functional*.—Necessarily a hypothetical group. It is never easy to exclude all reflex and toxic possibilities, and failure leads to the designation of neurasthenic headache. Fatigue, mental strain, and any sort of emotional disturbance will also be included.

INVESTIGATION AND TREATMENT.

A few general principles in the investigation of a chronic long-standing headache may now be considered. General *interrogation* may elicit a history of head injury or of venereal disease; obvious organic nervous disease may be evident from peculiarities of articulation. The commonplace physiological occurrences of digestion, the bowels, the menses, sufficiency of fresh air and recreation, and hygiene generally will be contemplated. Relief by recumbency suggests a circulatory association; a periodic incidence, migraine or neuralgia. Interference with sleep points to an organic intracranial cause. In certain instances a protracted psychological inquiry will be demanded. Taking the *temperature* is an elementary precaution; among the acute infections typhoid fever and meningitis are most prominent causes for headache. In the *eyes* there may be refractive error, glaucoma, and fundal changes to be recognised. Extremes of *blood pressure* readings are often encountered when headache is completely absent, but this estimation is useful as an index to possible renal disease or the vasomotor peculiarities associated with low pressure. In the *blood* there may

be a positive Wassermann reaction, evidence of anæmia, and rarely of polycythæmia. *Albuminuria* may be found as an accompaniment of nephritis, or of the physical state with a low blood pressure and vasomotor instability. The *nose and sinuses* must receive attention, and the *cervical fascia* and muscles should be palpated.

In *treatment* any obvious or discovered cause must naturally be dealt with. Vigorous antisyphilitic treatment is required if there is any reasonable suspicion of this infection. Attention to teeth, removal of adenoids, cleansing of sinuses, correction of a refractive error, the treatment of anæmia by iron, the use of vasodilators or venesection, may be required, or the administration of calcium salts. On the digestive side appropriate treatment by aperients, &c., or the restriction of alcohol is often desirable, and in more elusive cases a search may be made for some allergic peculiarity. I once traced an otherwise inexplicable headache to ingestion of egg-albumin, and there may be many similar possibilities.

But often symptomatic treatment must be employed. Cold applications or evaporating lotions will be acceptable in almost any case. The numerous members of the salicylate group in their various combinations are too well known to need enumeration, and the idiosyncracies of some people in relation to these are equally familiar. Gelsemine has a reputation for neuralgic states. Cannabis indica is very useful for the headache associated with nervous strain in men, but caution in administration in the case of women is emphasised. Potassium iodide in small doses is well worth trying, even if there is no suggestion of syphilis. For the intractable headache of tumour, when surgical relief is impossible, hypnotics are necessary. Finally, as a resort in a particularly obstinate case, the old-fashioned treatment by a seton may well be tried.

STRATEGY AND TACTICS IN OBSTETRICS.

(MR. BRIGHT BANISTER.)

I am taking strategy to mean the general art of conducting a campaign, and tactics the detailed manœuvres of units incidental to the development of a campaign. The conduct of a natural pregnancy, labour, and puerperium comes under the heading of strategy, while the detailed treatment of abnormalities as they arise will call for tactics.

It has been suggested that if *antenatal care* were perfect no obstetric fatalities would arise, but though I am unwilling to minimise the importance of antenatal care it must not be forgotton that it has certain limitations. Obstructed labour, for example, should be rare to-day, but this danger cannot be wholly avoided by antenatal supervision. Gross abnormalities of the pelvis or malpresentations of the baby should certainly be recognised during pregnancy, but the contractile power of the uterus itself cannot possibly be estimated before labour begins. Very rarely irregular action of the uterus may produce a contraction-ring which obstructs delivery. Gross cases of primary uterine inertia are found in a recognisable type of woman—the nervous type, who approaches her labour in a state of fear. It is important to begin the management of labour before labour begins, by putting the patient into the proper condition to face it.

By antenatal care it may be possible to arrange our tactics so as to minimise the risk of hæmorrhage. It is possible, for example, to recognise placenta prævia fairly early, before there is danger of hæmorrhage. There is want of engagement of the presenting part, or an abnormal position of the fœtus. One side of the head is more easily palpable than the other, both on abdominal and vaginal examination, and one uterine artery is felt to be pulsating more powerfully than the other. Bleeding in placenta prævia is painless unless associated with the onset of labour.

Labour, where there is mild disproportion, is easier to conduct if the case has been thoroughly investigated beforehand. Where the mother has an asymmetrical pelvis, for example a pelvis smaller on the left side, a right occipito-anterior presentation will be accepted as a good sign, because the widest part of the child's head will engage in the widest part of the maternal pelvis. A left occipito-anterior presentation, on the other hand, will be unfavourable; you will know that the ground is untenable, and that you are bound to lose. When there is any doubt one should never hesitate to examine the patient under an anæsthetic at the onset of labour. The way in which the head is entering the brim should be observed, and its favourable or unfavourable aspects considered. As labour progresses the state of the lower uterine segment must be watched. As long as the cervix is stretched, the occipital pole coming down, and the caput only increasing gradually, progress is being made. If the cervix is beginning to get œdematous the outlook is not so favourable. It is impossible to decide what is happening in a tight fit for some time after the membranes have ruptured; even if labour is advancing well, we must be prepared to change our tactics suddenly if the condition of mother or child demands it.

A uterus must never be bullied or prodded after the baby is born; the placenta will not come out of the vagina till it is out of the uterus, and if time is given the danger of post-partum hæmorrhage is infinitely reduced. We do too little to ensure that the patient will be well when she gets up. Lax abdominal walls are common after childbirth, and should be prevented by suitable exercises. It is useless to tell the patient what to do; exercises should be done under the supervision of the nurse, and should be begun in bed. Massage is valuable and diminishes the chances of thrombosis and embolism.

Hitherto it has been believed that serious or fatal *morbidity during the puerperium* is most commonly due to infection of the placental site or of an injured perineum, but a recent investigation at Liverpool seems to show that a condition approaching gangrene in the lower uterine segment is the most common lesion. This implies that there must be a larger number of cases with serious lesions of the cervix than we have been accustomed to think, and perhaps this is an indication for not leaving patients too long in labour. Fever and rise of pulse-rate in the patient may be signs not only of exhaustion but of the onset of infection and should be taken as an indication for expediting delivery. Many of the cases showed cervical tears but I cannot believe that these were all due to the too early application of forceps; some I believe to be due to strong uterine contractions acting on a relatively resistant cervix. Where hæmorrhage continues after delivery, although the uterus is hard, the cervix should be examined and any tears sutured.

A *postnatal examination* should be made six to eight weeks after delivery, and if the pelvis is normal the woman can be dismissed. She should be warned to return, however, if she experiences pain, discharge, or any interference with the menstrual cycle when this reappears.

PUBLIC HEALTH SERVICES

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are 1930 statistics of two boroughs, two urban districts, and five rural districts:—

Name of district and estimated mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Infant and neonatal mortality.	Young child (1–5 yr.) mortality.	Maternal mortality in childbirth.
Leamington (29,450)	14·0	13·3	0·54	2·41	1·2	2·7	36/29	—	2·4
Wrexham .. (18,150)	14·6	12·7	0·88	1·82	1·1	3·0	74/–	37	7·4
Rowley Regis (43,600)	17·2	10·6	0·78	1·28	1·5	1·7	61/36	24	4·0
Kettering .. (31,070)	13·9	11·1	0·90	1·67	1·4	2·3	44/35	30	0·0
Doncaster .. (44,680)	27·0	9·7	1·00	0·80	1·7	1·1	71/–	—	4·1
Chelmsford.. (28,600)	14·4	11·3	0·87	1·43	0·9	1·9	46/–	7	9·7
Barnstaple .. (18,540)	13·9	12·1	0·59	1·30	1·3	2·4	50/–	—	0·0
Erpingham.. (17,750)	14·6	11·7	0·28	—	—	—	61/–	—	7·7
Hereford .. (13,060)	17·7	12·2	1·14	2·0	0·9	2·3	39/30	—	0·0

Registered stillbirths per 100 live births: Leamington, 3·6; Wrexham, 4·8; Rowley Regis, 3·4; Kettering, 2·3; Doncaster, 3·5; Chelmsford, 3·6; Barnstaple, 3·5.
The populations are the (R.-G.) estimates for 1929, except that 140 has been added to Rowley Regis.

Leamington.

Dr. W. L. Goldie says the Royal Spa is being increasingly used as a residential area for Coventry and Birmingham, and that this fact increases the problem of house shortage. Apart from two factories there are few industries beyond supplying the wants of residents and visitors to the Spa in search of health. Progress has been made in many matters during the last quinquennium. The pump rooms have been brought up to date and the new filtering plant for the baths has more than doubled the number of users in the last few years. Motor-tractors have been introduced for the removal of refuse; the destructor has been remodelled and new sewerage works have been completed, and a considerable portion of the bed of the River Leam has been cleaned. During this period the council have built 246 houses, and 270 have been erected by private enterprise as against 170 and 35 in the previous quinquennium. In 1927 the Leamington Slum Clearance Company provided eight houses and in 1929 ten houses; and for each house erected by them one slum dwelling was closed and demolished. The five-year programme proposes 400 houses for new housing and 96 for the clearance of slums. The latter may be erected by the private company just mentioned. Towards the end of 1930 the corporation purchased 17 acres for the erection of 190 houses, 160 of which will be finished by the end of 1931. The council retain three maternity beds at the Warneford Hospital at which there is both an antenatal and a postnatal clinic. Mothers, admitted under the council's scheme, attend the postnatal clinic a month after discharge.

Wrexham.

Dr. T. P. Edwards says a striking feature of the year was the increase in the borough of infectious diseases. The fever hospital belongs to the rural district council and is administered by a joint committee of several authorities. Of 105 cases of diphtheria in the borough, 99 were admitted amongst whom there were six deaths, two of the cases being moribund on admission. Scarlet fever cases numbered 155 with three deaths, the hospital admissions being 102. It has been decided to add two blocks to the hospital, one consisting of single-bedded wards; and an application has also been made by the borough for the formation of a joint hospitals board. The borough is handicapped by its present boundaries in dealing with housing requirements, and discussion is now taking place with the rural district and the county council for an extension. The renovation and extension of the sewerage scheme has been taken in hand and the new scheme will make ample provision for any extension of the borough which may take place. The reconstruction of the public abattoirs is also under consideration. A preliminary report has shown the need for 220 houses to deal with slum clearance, but the policy of the council as to the displaced slum-dwellers is still under consideration.

Rowley Regis.

Dr. W. E. Roper Saunders says the chief industries in this urban district are the manufacture of iron goods and of bricks and tiles. Upon the hills there are important quarries yielding a hard basaltic rock known as "Rowley Rag," used for paving and channelling purposes. Several years' depression in all the industries have lowered the general condition of the population. Dr. Saunders draws attention to a change of custom in death certification, in that deaths formerly certified as senile decay are now certified as heart disease and arterio-sclerosis. Of the 75 heart disease deaths in the Registrar-General's short list for Rowley Regis, 43 are at ages over 65, most of which were probably due to natural degenerative processes. Dr. Saunders would like to see these deaths grouped as: (1) congenital heart disease; (2) infective heart disease—i.e., after-effects of rheumatism, scarlet fever, &c.; (3) specific—i.e., syphilitic—heart disease; and (4) cardio-vascular degeneration.

The isolation hospital belonging to the district council is quite unfit for use and patients from the area are sent to the Stourbridge and Halesowen joint hospital upon a charge basis per week. The county council are considering the provision of a large joint isolation hospital for South Staffordshire. The tuberculosis scheme is administered by the Staffordshire, &c., joint committee, but there is an insufficiency of hospital beds for advanced cases. For maternity cases the Birmingham hospitals are used, and on July 1st, 1931, the council decided to provide experimentally for one year a consultant in all cases of difficulty whether prior to or during labour. Mr. Lewis Graham, F.R.C.S., who has already been appointed consultant for puerperal fever, will act in this new capacity. No in-patient institutional treatment has yet been arranged for ophthalmia neonatorum. The case-fatality of diphtheria has been high during the last three years. In 1928 there were 33 cases with three deaths; in 1929, 59 cases with four deaths; and in 1930, 51 cases with four deaths. Only 23 of the 51 cases were admitted to hospital in 1930.

Out of the 9283 inhabited houses, 1043 are owned by the council. There is a shortage of houses at reasonable rates and considerable overcrowding, as only about 10 per cent. of the population can afford to pay more than 7*s.* 6*d.* per week. A number of council tenants sublet rooms but so far no definite

action has been taken. Dr. Saunders advocates council houses being allocated to families including an infectious case of tuberculosis, with the limiting proviso that "they are able to pay the rents required." There are two areas in the district to be represented as "clearance areas," one embracing 90 and the other 46 houses. A small improvement area will necessitate the demolition of three old-type houses. Individual unfit houses will be considered in regular instalments.

Kettering.

Dr. Cecil B. Hogg says the taking over of the Manor House as the health office and school medical department has been a great improvement. The general standard of housing is good. Of 7832 inhabited houses in the urban district, 785 are owned by the council and only 579 were built prior to 1875. Of the older houses 136 have been scheduled for demolition involving the displacement of 492 persons. There is still a shortage of houses and consequent overcrowding, in a few instances due to unemployment and financial considerations. An ante-natal clinic was opened in October. The council retain four maternity beds at the General Hospital and when this accommodation is not available provision can be made at the poor-law institution for patients from homes unsuitable for confinement. Dr. Hogg expresses his gratitude to the ladies' voluntary committee for their help in maternity and child welfare work. The Astor shield awarded by the National Baby Week Council to the district which organises the most effective Baby Week campaign has now become the permanent property of the Kettering baby week committee, as the result of three successive wins. Difficulty has been experienced in maintaining a sufficient supply of nurses at the isolation hospital and it has not yet been possible to make use of the new cubicle wards. The Karrier motor sweeper gave excellent service in street cleansing; dustless refuse-collecting wagons have replaced open ones; and the controlled method of tipping is in successful operation at the council's two tips. A common lodging-house for 50 lodgers has been made out of a factory with satisfactory results, all the requirements of the council having been met. The public baths, which include a covered and an open-air swimming bath, are well used, and the recreation grounds are being extended.

Doncaster Rural.

Dr. A. B. Dunne says his rural district comprises 37 parishes and covers 79,275 acres. All the parishes, except seven, are supplied with pure water of 12 degrees of hardness from wells in the new red sandstone by the joint water board. Seven parishes are in the statutory area of the Doncaster Corporation supply. The water in some of the wells sunk in the same strata tends to become much harder. The cause of this is obscure. The area around the five new collieries has become urbanised, and there is an influx of population from Doncaster. Ribbon building has taken place along all the roads. There is still unaltered agricultural country between the urbanised parishes. No further colliery developments have taken place recently, and there are now empty houses in some of the colliery villages. Fewer men are employed in agriculture, and in some cases the colliers come to live in the country villages in preference to the mining villages. The new houses completed in 1930 numbered 176, the lowest figure of the last ten years. There has been a general improvement in housing conditions. Some reorganisation of the schools has taken place by which school children are brought by motor-bus to a central school from a wide area of parishes and hamlets. Dr. Dunne speculates as to the possible effect of this plan in the diffusion of infectious diseases. The notifications of cerebro-spinal fever during the last five years were 1, 1, 0, 1, and 15. Among the 15 cases in 1930 there were seven deaths. There were five deaths from puerperal fever, and three of these occurred in Doncaster borough without the cases having been notified.

Chelmsford Rural.

Dr. John F. MacDonald says that for many years, especially in the outlying agricultural parishes, the number of houses in this rural district have not been sufficient to meet the requirements of the population and replace old cottages. Since the last survey report the council have built 417 houses to meet this shortage, and have given subsidies for the erection of 487 houses by private enterprise. At the end of 1930 the council owned 602 houses, equivalent to 7·5 per cent. of the total houses in the area. Overcrowding is mainly due to houses being occupied by more than one family and insufficient bedrooms for the number in the family. There are no unhealthy areas, and the unfit houses can be dealt with singly. No demolition order was made during the year. One owner was fined thirty shillings for letting a house on which there was a closing order outstanding. A list of houses against which closing orders have been made since 1909 shows that of 19 houses closed in 1929 eleven are still occupied, one has been repaired, four are under repair, and three are empty. The return for 1930 shows that there are 32 houses totally unfit for human habitation, and that 154 additional houses for the working classes are estimated to be needed in 16 of the 28 parishes. In December, 1930, the council decided to erect 142 houses in the parishes referred to. Tents, vans, sheds, &c., used as temporary houses are located in six parishes, and Dr. MacDonald comments that the by-laws were intended to deal with movable structures used for human habitation by persons on the move from one locality to another, but that in practice most of these structures remained permanently in one locality, and consequently the by-laws are not adequate to deal with the conditions created.

Barnstaple Rural.

Dr. J. R. Harper says the success of the Housing (Rural Workers) Act, 1926, has been most marked in Devon. At the end of February, 1931, the county council had approved 555 applications, and had 85 more under consideration. The grants promised amounted to £53,212, and the grants paid in respect of 368 dwellings to £34,902. Barnstaple rural district has used the Act more than any district in the county. Approved applications have numbered 87, and further schemes are in hand for 37 more cottages. The importance of the Act, says Dr. Harper, cannot be too strongly urged upon those who are in possession of property which can be made to conform with the necessary requirements. The rent charged for these dwellings is 3*s*. 7*d*. per week, and this Act has therefore succeeded in providing "healthy and decent accommodation for the rural worker at a moderate rent."

Mr. H. Hargreaves, the sanitary inspector, alludes to the difficulty in getting repairs carried out owing to the fact that the standard wage of an agricultural worker is 32*s*. 6*d*. per week, and the cottage rents have to be low. If the owner is asked to carry out extensive repairs he will prefer to close the house. The usual procedure is therefore to ask the owner to carry out a portion of the work or to suggest application for a grant under the Housing (R.W.) Act, 1926. The council have not hitherto built houses, but it is intended to erect 149 in the 21 of the 36 parishes in which there is a shortage.

Erpingham Rural.

Dr. J. E. Linnell's rural district has an 18 miles seaboard from Cley on the west to Mundesley on the east, broken by the urban districts of Cromer and Sheringham. Agriculture is the industry of the inland villages, and fishing and letting rooms to visitors that of the coast villages. A good supply of water is available from the chalk by pumping for

Holt and Mundesley. The council have their own deep well at the isolation hospital, the water being raised by a windmill. Most of the villages are supplied with water from shallow wells in the Glacial Drift. Dr. Linnell has had no reason to blame these shallow wells for water-borne disease since he became medical officer in 1912. Three of the refuse tips are a nuisance, and Dr. Linnell suggests "controlled" tipping, successfully adopted in a neighbouring urban district, as a remedy. Of the 4799 inhabited houses the council own 239. The old cotttages in the purely rural villages are, says Dr. Linnell, of the low standard to be expected in an agricultural district where the land is poor. Nevertheless he has rarely been able to blame the cottages for the ill-health or disease of the occupiers. It may be pointed out, however, that both the general death-rate and the infant mortality-rate were higher than the rate for the whole country in 1930. The Registrar-General's short list of causes of death is not included in the report, so that one cannot say whether the low death-rate from tuberculosis included residents who died outside the area.

The population of the district tends to decrease, and there is no marked shortage of cottages for the land worker. When applications are received the council hold an inquiry and build more cottages if the want is proved. The real difficulty is that an agricultural labourer earning less than 30*s*. cannot afford to pay 5*s*. a week rent.

Hereford Rural.

Dr. R. Wood-Power says the housing survey of 1919 disclosed that about 5 per cent. of the working class houses in this rural district were seriously defective, and 25 per cent. needed repair. The council have been made the authority for the Housing (R. W.) Act, and a scheme has been prepared for assisting owners in the improvement of existing cottages. No applications were received under the Act during 1930, although one of the difficulties in remedying unfit houses is said to be inability of the owners to provide the necessary capital. It is difficult to see why the Act which is so successful in Barnstaple should be of no avail in Hereford or Erpingham. Dr. Wood-Power refers to the failure of house owners to protect their dip wells from pollution, and also condemns the not uncommon practise of discharging slop drains into the nearest roadside ditch. There were seven cases of typhoid, all of which ended in recovery. Four came from three houses which used a well polluted with sewage. Successful lectures on clean milk production have been promoted in coöperation with the agricultural organiser and the dairying instructress for the county.

About 2500 hop-pickers came from South Wales and Staffordshire to 22 farms. All sorts of out-buildings are used for their accommodation, but there is an increasing number of specially erected buildings. Much greater regard is paid to the welfare of the pickers than formerly. The posters of the Health and Cleanliness Council have been instrumental in stimulating the best efforts of the pickers to secure their own comfort and cleanliness.

MENTAL HOSPITAL REPORTS.

The HERTFORDSHIRE COUNTY MENTAL HOSPITALS at HILL END, ST. ALBANS, and at ARLESEY had 1212 patients at the end of last year and are somewhat short of beds. Plans are now complete for the erection of suitable accommodation for a further 365 patients and for a mental deficiency institution. The opening of the nurses' home in January, 1930, provided 22 more female beds, and a detached mansion, Highfield Hall, has been taken over for quiet and convalescent female paying patients. The recovery-rate was 32·1 per cent. and the death-rate 4·92 per cent. The general health was satisfactory; there were nine cases of chicken-pox among children, five of severe diarrhœa, one of paratyphoid B, and one of dysentery. The medical superintendent stresses the importance of sepsis as an ætiological factor, and the value of the work of the dentist, gynæcologist, and ear, nose, and throat surgeon. Sixteen out of 20 men and 39 out of 43 women discharged during the year received some form of special treatment, such as induced malaria, hydrotherapy, or eradication of sepsis. An increasing number of patients attend the handicraft class on the women's side, and many of the useful articles made there are sold in the canteen. Twelve men have had full parole and eight men and six women parole within the estate. Unfortunately, the hospital still has to house some mental defectives. Since the Mental Treatment Act came into operation, three temporary but no voluntary patients have been admitted. The laboratory carried out nearly 2000 tests during the year, of which rather less than half were done for the medical officer of health. During the year, five nurses and three attendants obtained their R.M.P.A. certificate, one with distinction.

Of the KENT COUNTY MENTAL HOSPITALS, that at BARMING HEATH had 1941 patients on the last day of last year, causing considerable overcrowding. The recovery-rate for the year was 34 per cent. and the death-rate 6·1 per cent. There were seven cases of erysipelas and six of influenza, but otherwise the patients' health was good. Electricity has been installed throughout the hospital. The occupations department keeps increasing numbers of patients employed, with very gratifying results, and efforts are made to avoid any monotony. The department is self-supporting, and has sufficient surplus funds to send parties to the seaside and to entertainments and to help needy patients. Parole is granted extensively. The visiting commissioners point out an admirable device which they found in the poison cupboard: every poison bottle has on it the name of the antidote and directions to the nurse what to prepare and what to give after sending for the doctor. They urge the establishment of a laboratory, although the present arrangement of sending specimens to the county pathologist is technically quite satisfactory. An out-patient department has been opened at the West Kent General Hospital and is already appreciated.

At RUBERY HILL AND HOLLYMOOR there were 1546 patients on Dec. 31st last. The recovery-rate was 46·9 per cent. and the death-rate 6·8 per cent. There was less influenza than in the previous year and no intestinal epidemic disease; there were two cases of erysipelas and three of tuberculosis. A total of 385 men and 364 women were kept employed during the year at trades or work for the hospital. Ten men and eight women nurses passed the final examination of the R.M.P.A. during the year, bringing the total certificated to 90 men and 63 women. Ten men and 14 women nurses are registered by the G.N.C.

The IPSWICH COUNTY BOROUGH MENTAL HOSPITAL housed 339 patients on the last day of last year. The recovery-rate for the year was 38·9 per cent. and the death-rate 6·82 per cent. Both figures show distinct improvement on those in the preceding year. The general health was good, there was no epidemic disease, and only two patients are known to be phthisical. During the year 11 post-mortem examinations were conducted. A small bacteriological unit has been established, so that general paralysis can now be treated by malaria, and "sulfosin" injections can be given when required. The dental surgeon visits fortnightly, and saw 97 patients during the year. An occupational therapy class has been formed and is growing rapidly; it is supplying the rugs required for the rooms of the new nurses' home. Wireless was installed in the dining hall and day rooms at Christmas, and in the summer there are outings by motor-bus to the seaside. Parole and week-end leave are granted freely. The new nurses' home and the new infirmary with solarium are nearly completed and will to some extent relieve the overcrowding. There is, however, great need for a detached admission

and convalescent block. Preliminary negotiations for an out-patient clinic have been made. Of the nursing staff 11 men and 10 women hold the R.M.P.A. certificate and six men and three women are registered. Alterations in the uniform have done much to improve the "nursing" atmosphere of the hospital.

There were 1342 patients on the registers of the DEVON MENTAL HOSPITAL on Dec. 31st last, and the accommodation is considerably overtaxed. The recovery-rate was 45·45 per cent.—the highest since 1899—and for private patients alone it was 75 per cent. The death-rate was 7·5 per cent. and post-mortem examinations were made in just over 78 per cent. of cases. The laboratory made over 2000 routine examinations as well as a number of special investigations. There was one case of typhoid fever, which occurred after the routine inoculations with T.A.B. had been discontinued; this prophylactic measure is now to be re-enforced. Six cases of general paralysis were treated with malaria, five from mosquitoes, and one from infected blood; four were discharged and one of the others is considerably improved. Of the 46 cases which have now been treated here, only one has returned to hospital with a relapse. Tryparsamide is also used for general paralysis, and two cases of disseminated sclerosis were given a course of malaria. Of 34 patients treated with ultra-violet light, 10 improved mentally and 16 physically, but six appeared to be made worse; the treatment has been found particularly unsuitable for acute agitated melancholia. The visiting dentist attended fortnightly and examined 976 patients. The visiting ophthalmologist saw 76 cases, and the radiologist made 54 examinations. The visiting surgeon performed 27 major operations. Parole is given as freely as possible; 135 patients have had it in the grounds and 48 beyond the estate. Many of the wards are now worked on the open-door principle. The out-patient clinic at Exeter had 215 attendances during the year, as compared with 63 the previous year, and weekly sessions are now held. A number of handicrafts and industries are actively pursued in this hospital and many useful articles have been made. The hospital was a centre last year for the preliminary examination of the G.N.C., for which 17 of its nurses entered. Three sisters and one attendant passed the final examination of the G.N.C. and nine nurses and one attendant obtained the R.M.P.A. certificate.

At CHARTHAM DOWNS there were 1402 patients at the end of last year, and here again there is urgent need of more accommodation. The new nurses' home is nearing completion. Plans for an admission hospital and convalescent villa have been provisionally approved, and a house for mental defectives has been opened. The recovery-rate for the year was 37 per cent. and the death-rate 8 per cent. The general health was good, except for a mild epidemic of mumps in the children's ward. Sulfosin is given for general paralysis and for some cases of schizophrenia. The visiting ear, nose, and throat specialist is investigating nasal sinus disease. The pathological department carried out a number of investigations. Seventy-two men and 13 women are allowed parole beyond the estate and 67 men within it, and a number of wards are "open-door." The hospital now has a modern operating theatre and a special department for the dental, ophthalmic, and ear, nose, and throat specialists. The Kent and Canterbury Hospital have arranged for an out-patient clinic to be held there by medical officers from Chartham Downs. The nursing staff are eager to work for their certificate, and one attendant obtained a distinction in the R.M.P.A. examination.

The STAFFORDSHIRE MENTAL HOSPITALS' BOARD have three institutions: at Stafford, Burntwood, and Cheddleton. At STAFFORD there were 1086 patients on Dec. 31st last, which meant a deficiency of 136 beds. In an institution of this kind—opened in 1818—the overcrowding is more serious than in one of a more modern type, and the staff are to be congratulated on the recovery-rate of 25·77 per cent. and on a death-rate of no more than 6·2 per cent. Work is proceeding on an admission and convalescent hospital. A number of patients are kept usefully employed, but there is no occupations officer, and the nursing of the sick is hampered by the absence of verandahs. Fourteen patients were allowed out on trial, but only two of them with money allowances. There was no epidemic disease in the hospital except for one case of severe diarrhœa. The laboratory has carried out routine and research work, and a paper on the significance of cholesterol in cellular oxidation is to be published. The consulting surgeon visits when required. Fifty male and seven female nurses are certificated or registered, and five men and one woman obtained the R.M.P.A. certificate during last year.

At BURNTWOOD there were 988 patients at the end of the year, and here also there is overcrowding. Permission has now been given to prepare plans for an admission hospital of 72 beds and the committee hope to provide two convalescent villas in the grounds. The recovery-rate for the year was 32·2 per cent. and the death-rate 6·73 per cent. There were seven cases of influenza and three of dysentery, and the laboratory examined nearly a thousand specimens of fæces alone, as well as making many other routine tests. A number of the patients are employed on raffia work and rug-making. Several operations were performed by the consulting surgeon. Thirty patients were allowed full and 18 a more limited freedom. Four nurses passed the final R.M.P.A. examination and 42 men and 12 women are certificated or registered. No female nurses are employed on the male side.

At CHEDDLETON there were 1190 patients at the end of last year, and here also further beds must be provided soon, probably within the existing estate. An admission hospital is being built. The death-rate was lower than in previous years, but there were nine deaths from tuberculosis. There were seven cases of dysentery. There are a large number of children in this hospital and these offer many special problems. Sixteen general paralytics were treated with malaria and two with sulfosin; six were discharged apparently recovered and five are much improved. The laboratory carried out a number of tests, and the visiting specialists saw a number of patients; they complain of the absence of an operating theatre, and the medical superintendent hopes that it will be possible to provide one in the nurses' bicycle room. Parole and handicraft work are in full use in this hospital. Of the staff 53 men and 24 women are certificated or registered.

The WEST SUSSEX COUNTY MENTAL HOSPITAL at CHICHESTER had 914 patients on its books on May 29th last. The death-rate for 1930 was 5·89 per cent. and the recovery-rate 38·13 per cent. The general health was good, and there was no epidemic disease except for one case of scarlet fever. Three operations were performed and three men were sent to Knowle for malarial treatment; they benefited physically but showed very little mental improvement. A handicraft department was established during the year, one of the nurses taking the course of instruction arranged by the Central Association for Mental Welfare. Parole beyond the estate is given to 16 men and 12 women; 45 other patients are free within the grounds, and several of the wards are "open-door." An out-patient clinic has been opened at the Worthing Hospital, and 12 voluntary but no temporary patients have been received at the Mental Hospital. A new block for chronic patients and a villa for 50 women are being erected, and will help the difficulties incident on overcrowding. During the year 17 nurses and six attendants obtained the R.M.P.A. certificate and one nurse passed the final examination of the G.N.C.

CORRESPONDENCE

BENDIEN'S WORK ON CANCER.

To the Editor of THE LANCET.

SIR,—The Investigation Committee of the British Empire Cancer Campaign has inquired into the Bendien method of diagnosis for cancer, and finds that, although the preliminary results were encouraging, subsequent inquiries have failed to justify the early promise. The Investigation Committee therefore has come to the conclusion that the Bendien method of diagnosis for malignant disease cannot at the present time be accepted as reliable.

I am, Sir, yours faithfully,

C. GORDON WATSON,
Chairman, Investigation Committee.

British Empire Cancer Campaign, 12, Grosvenor-crescent, London, S.W., Oct. 2nd, 1931.

*** As we go to press we are informed by Dr. J. R. de Bruine Groeneveldt of the outcome of an investigation at the Institute for Preventive Medicine in Leiden—namely, that the spectroscopic differentiation of serum albumins is not possible with Bendien's method.—ED. L.

"A DISCLAIMER."

To the Editor of THE LANCET.

SIR,—Mr. Rowley Bristow's disclaimer in your issue of Sept. 26th (p. 715) is, I think, hardly necessary if the full context of the pertinent sentences of the paragraph be taken. It is as follows:

"Thanks to certain ingenious technical modifications introduced by Dr. Morton Smart, his apparatus produces a far more comfortable current than the unmodified faradic current. It can therefore be used at an earlier stage of recovery than its prototype. The credit for introducing *this current as a routine procedure for injuries requiring* muscle movements and re-education is chiefly due to Mr. Rowley Bristow, and the apparatus is therefore often called by his name. The Morton-Smart coil, the Smart-Bristow coil, and the Bristow coil (as it will be called hereafter) are one and the same."

The words in italics have been omitted by Mr. Bristow in his quotation, and these with the other sentences give, I think, full credit to Dr. Morton Smart for the original invention and use of this apparatus, but some credit is certainly due to Mr. Bristow as an orthopædic surgeon for calling for its routine employment in suitable cases.

I was present at the discussion of the Electrotherapeutical Section of the Royal Society of Medicine in 1923, and heard Mr. Bristow's generous disclaimer on that occasion, and was fully aware of the exact position of affairs as then recounted. Hence the careful wording of the paragraph above quoted.

I am, Sir, yours faithfully,

Park-crescent, W., Oct. 2nd, 1931. C. B. HEALD.

THE ADENOID FACIES.

To the Editor of THE LANCET.

SIR,—I am particularly anxious to obtain, for display in our museum, photos of a case of adenoids, one showing the condition before operation, and another taken a year or so later to illustrate the mental and physical improvement that has resulted from treatment.

If any reader has such, and would loan the same to me, I would have them copied, and originals promptly returned.

I am, Sir, yours faithfully,

H. B. NEWHAM,
Curator, London School of Hygiene and Tropical Medicine.

Keppel-street (Gower-street), W.C., Oct. 5th, 1931.

CASES OF PERNICIOUS ANÆMIA.

To the Editor of THE LANCET.

SIR,—I should be very grateful if any of your readers would refer me cases of pernicious anæmia for treatment at Guy's Hospital.

Patients with septic complications or paralysis are not suitable. I am, Sir, yours faithfully,

L. J. WITTS.

Guy's Hospital, London, S.E., Oct. 6th, 1931.

OBITUARY

EDMUND WEAVER ADAMS, F.R.C.S.

THE death occurred on Thursday, Sept. 24th, of Dr. Weaver Adams, who for 40 years had been in general practice in Slough, obtaining a position not only in the town but in the surrounding countryside whose influence it would be difficult to estimate.

Edmund Weaver Adams was born in 1869, and was educated at the City of London School and King's College Hospital. He qualified with the double diploma in 1892, and took the F.R.C.S. England in 1894, the age regulations preventing him from receiving the diploma one year earlier. After holding the house appointments at his hospital, he entered almost immediately into the practice with which he remained connected for the rest of his life, and he built up his great connexion by a combination of high professional skill and of power to understand the difficulties, other than physical, that might be present among his patients of all sorts. Early in his career he obtained the D.P.H. of the Royal Colleges, and three years after his start in Slough became medical officer of health for the district. He held numerous other professional appointments, all of which he discharged zealously, but he was particularly interested in questions connected with maternity and child welfare, and the last three years of his life were largely devoted to raising funds for the Slough Maternity Home. He had the satisfaction of seeing the home opened this year, although it was started encumbered with debt, and a proposal has been made that the removal of this debt would prove a fitting memorial to one whose straight and strenuous life had gained him such widespread admiration and respect. We learn that already the editor of the *Slough, Windsor and Eton Observer* will receive subscriptions towards a fund on behalf of the Home, and communications, marked "For the Dr. Weaver Adams Memorial," should be addressed to him at Buckingham-gardens, Slough.

Weaver Adams was widely known for his devotion to and proficiency at cricket. An excellent field and an astute lob-bowler, his batting figures for the Slough Cricket Club indicate that, even in the highest

cricket circles, he would have been a prominent exponent of the game. From the year 1905 for the following 15 years his batting average was only once below 40 and only twice below 50, while he wound up a 21 years' captaincy of the club by making a century in each of his last three games.

Dr. Adams's death was tragically sudden. He had been aware for some time that his cardiac condition was unsatisfactory, and had for that reason discontinued playing cricket. While on a holiday in Llandrindod the car, in which he was driving his daughter and her husband, got fixed in a rut. While his son-in-law was gone to fetch help, Dr. Adams and his daughter attempted to push the car free, and during their efforts Dr. Adams collapsed and died immediately.

Dr. Adams leaves a widow, three married daughters, and one son, Dr. Ralph Weaver Adams, who has been for some time associated with his father in practice. Another son, a flying officer, lost his life in the war.

Dr. HERBERT ARNOTT EADIE, who was killed on Sept. 27th in an accident to a motor tractor at Post Hill, Leeds, received his medical training in Edinburgh, where he graduated M.B., Ch.B. in 1922. After holding resident posts at the Royal Infirmary, Edinburgh, and at the Leeds Public Dispensary, he went into general practice in Leeds, where he soon made his mark, medically and socially. He was a popular officer in the Territorial Army, and for the last four years had held a captaincy in the R.A.M.C. attached to the 146th Field Ambulance. A keen sportsman, he was fond of riding, shooting, golfing, and motoring. He was a man of charming personality, and many among his large circle of friends will have experienced in his tragic death a sense of personal loss. Dr. Eadie was in his thirty-first year, and leaves a widow with two young children.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS.

THE DISSOLUTION.

In the House of Commons on Oct. 6th the Prime Minister announced that the King had consented to a Dissolution of Parliament. It is understood that nomination day for the new Parliament will be Friday, Oct. 16th, and that polling will take place on the 27th.

LEGISLATION ADVANCED.

ON Wednesday, Sept. 30th, the NATIONAL ECONOMY BILL was passed through the remaining stages in the House of Lords and received the Royal Assent.

The FINANCE (NO. 2) BILL was read the third time in the House of Commons on Thursday, Oct. 1st, and was read a first time in the House of Lords on the following day.

In the House of Commons on Thursday, Oct. 1st, Sir P. Cunliffe-Lister, President of the Board of Trade, introduced the FOODSTUFFS (PREVENTION OF EXPLOITATION) BILL, which was read a first time.

In the House of Commons on Tuesday, Oct. 6th, the Foodstuffs (Prevention of Exploitation) Bill was passed through Committee and read the third time.

GOVERNMENT AND FOOD PRICES.

On Monday, Oct. 5th, in the House of Commons, Sir P. CUNLIFFE-LISTER, President of the Board of Trade, moved the second reading of the Foodstuffs (Prevention of Exploitation) Bill. He said that the object of the measure, which was limited to six months, was to ensure that there should be no exploitation, either by the creation of shortages or by unreasonable increases of prices of articles of food and drink of general consumption, by reason of the financial situation in which the nation found itself through having gone off the gold standard. He could not say that the powers sought in this Bill would be justified by anything that had happened hitherto or appeared likely to happen, but the Government felt that the House ought not to adjourn without powers being taken in case they might be necessary while Parliament was not sitting. A tribute was due to the traders, both wholesale and retail, for the attitude they had taken up. On Sept. 21st, the day on which the country went off the gold standard, he asked the representatives of the great wholesale food trades to meet him—meat, flour, bacon, sugar, tea, provisions, and so on—and he got an immediate offer of help. It was of great importance that from the very outset trade should be kept on a normal basis, and it was essential in cases of this kind to tackle it at the wholesale end. To create a vast organisation, such as the Ministry of Food during the war, would take many months, and by that time the emergency would have passed. They had to ensure that there would be a steady flow of supplies through the normal channels at reasonable prices. The powers were deliberately designed to be as wide as possible. He believed that they would enable the Government to set up a Purchase Board, but a financial resolution would be necessary to carry that out. He hoped and believed that with the coöperation and goodwill which had been shown on the part of the great trades up to the present, these powers would never have to be used, but, if necessary, the Government would not hesitate to do so.

After further debate the Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, SEPT. 30TH.

Regional Medical Officers.

Mr. STEPHEN asked the Minister of Health if he would consider reducing expenditure by abolishing or reducing the regional medical office department under the National Health Insurance Acts, and allow panel practitioners to determine whether their patients were fit for work or otherwise without interference from an outside department.—Mr. E. D. SIMON replied: The provision of a second medical opinion in cases of doubt whether an insured patient is incapable of work has been recognised as desirable since sickness benefit first came into operation, and my right hon. friend cannot undertake to consider the hon. Member's suggestion with favour.

THURSDAY, OCT. 1ST.

Unemployed Workers and Health Insurance.

Sir ROBERT YOUNG asked the Minister of Health whether unemployed workers would be automatically deprived of national health insurance benefits should the public assistance committee, under the means test, deprive them of further unemployment benefit; and, if not, what steps would be taken to keep them entitled to health insurance benefit, and, in particular, whether their health insurance contributions would still be payable by the State.—Mr. CHAMBERLAIN replied: The answer to the first part of the question is in the negative. So long as a person remains insured under the National Health Insurance Acts he will continue to be entitled to benefits in accordance with the provisions of those Acts, and will not be subject to penalties for arrears of contributions in respect of weeks for which satisfactory proof of unemployment is produced.

Hours of Labour in Mines.

Mr. MANDER asked the Secretary for Mines when the Geneva conference for the simultaneous ratification of the convention on hours of labour in mines was to be held.—Mr. ISAAC FOOT (Secretary for Mines) replied: As indicated by my predecessor in office, arrangements are being made for an informal discussion between the principal nations interested in this convention, and it is hoped this will take place at Geneva in the latter part of this month.

Government and Prices of Necessities.

Lieut.-Commander KENWORTHY asked the President of the Board of Trade whether he was contemplating the making of orders, in consultation with the Treasury, to prevent profiteering in food, coal, and other necessities under Clause 1, Subsection (3) of the Gold Standard (Amendment) Act, 1931. Dr. PHILLIPS and Mr. KIRKWOOD asked similar questions.—Sir PHILIP CUNLIFFE-LISTER replied: As hon. Members will be aware, I am introducing to-day a Bill taking powers to deal with the prevention of exploitation in regard to articles of food and drink of general consumption.

Bacteriological Standard of Milk.

Mr. POTTS asked the Minister of Health whether he could introduce legislation enforcing a definite bacteriological standard of milk to be fixed, and make it an offence for producers and retailers to sell milk not of the fixed standard.—Mr. CHAMBERLAIN replied: I cannot undertake to introduce any such legislation at the present time.

MONDAY, OCT. 5TH.

Cuts in Social Services.

Mr. LONGDEN asked the Minister of Health whether he was aware of the cuts in social services already agreed upon, as well as others contemplated, by the Birmingham City Council; and the amounts involved in the different departments.—Mr. E. D. SIMON replied: My right hon. friend is informed that no cuts have been agreed upon at present by the Birmingham City Council, that a general review of expenditure—both actual and contemplated—is under consideration by the standing committees of the Corporation, and that this does not necessarily imply that any recommendations will be made involving cuts in social services in Birmingham.

Regional Medical Service.

Mr. RHYS DAVIES asked the Minister of Health the cost of the regional medical service under the national health insurance scheme for each of the last five years.—Mr. CHAMBERLAIN replied: The following is the cost of the service in England and Wales: 1926–27, £130,785; 1927–28, £156,721; 1928–29, £156,700; 1929–30, £164,886; 1930–31, £184,036.

Poor-Law Relief.

Mr. DAY asked the Minister of Health the total number of persons in receipt of poor-law relief in England and Wales on the last convenient date; and if he had any statistics showing the number of rate-aided patients in mental hospitals, casuals, and persons in receipt of domiciliary relief on the same date.—Mr. E. D. SIMON (Parliamentary Secretary to the Ministry of Health) replied: The latest date for which complete figures are available is Jan. 1st, 1931. The following statement shows the number of persons in receipt of poor relief on that date, and the number of persons of certain classes in receipt of poor relief on subsequent dates:—

—	Number on Jan. 1st, 1931.	Number on latest available date.	
		Number.	Date.
1. Persons in receipt of poor relief*—			
(*a*) Institutional relief	212,166	193,159	Sept. 5th, 1931.
(*b*) Domiciliary relief	775,072	776,735	
Totals of 1	987,238	969,894	
2. Rate-aided patients in mental hospitals	108,917	—	—
3. Casuals	11,576	13,239	Sept. 5th, 1931.
4. Persons in receipt of domiciliary medical relief only	16,119	13,218	June 27th, 1931.
Total	1,123,850	—	

* Excluding rate-aided patients in mental hospitals, casuals, and persons in receipt of domiciliary medical relief only.

TUESDAY, OCT. 6TH.

Local Authorities and Housing Programmes.

Mr. MILLS asked the Minister of Health the number of local authorities who had received sanction for house-building programmes of over 100 houses since January, 1931; how many had been started; and how many of such authorities had received sanction or refusal since July 24th.—Mr. E. D. SIMON replied: The number of local authorities is 126. These local authorities have commenced to build over 27,000 houses since Jan. 1st, 1931, but the information available does not enable me to say how many of these houses are included in the authorisation given since that date. The number of local authorities referred to in the last part of the question are 14 and none respectively.

MEDICAL NEWS

HOSPITAL DINNERS.

Saint Bartholomew's Hospital.

The old students' dinner was held in the great hall of the hospital on Oct. 1st, under the chairmanship of Sir Percival Hartley, who infused an atmosphere of friendliness and unity. Recalling the noteworthy events of the year he congratulated the medical school and Mr. Girling Ball on his appointment as dean in succession to Dr. T. W. Shore. He expressed the general regret felt in the retirement of Sir Holburt Waring, whose name was perpetuated in the new block of wards which owed so much to his untiring work. Mr. Dunhills appointment as hon. surgeon to H.M. the King had necessitated his leaving his post as assistant director of the surgical unit to which Mr. Patterson Ross succeeded, but his services would be retained as associated surgeon to the unit. A residential college, Sir Percival remarked, built on the actual ground granted by Rahere, had been an integral part of the hospital for over 100 years; Sir James Paget was for long its warden, and two of his sons were born there. Of late years it had been necessary to utilise the residential college for other purposes, but he hoped that a new scheme of reconstruction would enable it to be re-established. Turning to the future he spoke of the proposal to remove pre-clinical teaching outside the hospital bounds, and to obtain more obstetrical teaching at the City of London Maternity Hospital. Of the 213 new entries to the medical school 118 were full-time. He welcomed the collaboration with St. Thomas's and Guy's in the matter of entrance scholarships, which would, he hoped, lessen competition and lead to other forms of coöperation. Many sporting trophies had been brought home, including the Rugby cups and practically all the water events. Week-end post-graduate classes to be held were reminiscent of the brief visits paid in olden days by students wandering in search of knowledge. The toast of "The Guests" was proposed by Dr. Geoffrey Evans, who praised Lord Stanmore, entrusted with hospital finance in difficult times, and the other lay officers; congratulated Sir George Collins on his recent honour; thanked the city companies for their unfailing support, and welcomed Admiral Sir Hugh Watson, Dr. T. Scott Lidgett, Sir John Rose Bradford, the directors of the Medical Services, the Master of the Apothecaries, Air Vice Marshal J. McIntyre, the deans of St. Thomas's and Guy's Hospitals, and the Dean of St. Paul's. In responding Dean Inge expressed his envy of doctors with their opportunities for individual treatment; his own duties he likened to those of a man intent to fill many narrow-necked bottles placed before him row upon row by throwing a bucket of water over them in the hope that a few drops at any rate might get home. The final toast of "The Chairman" was proposed by Sir Charles Gordon Watson, who has served as dinner secretary for 15 years, and is now associated with Mr. Reginald Vick.

Charing Cross Hospital.

The annual dinner for past and present students was held at Gatti's Restaurant on Oct. 3rd. The chair was taken by Dr. J. M. H. MacLeod, who proposed the toast of the hospital and the medical school. He had been first attracted to Charing Cross Hospital 30 years ago, he said, by the fact that, in the words of the *British Medical Journal*, it was the "most easily accessible of all the London schools"; but he had soon found other advantages in the colleagues with whom he had been fortunate enough to work—Sir James Galloway, Sir Herbert Waterhouse, Sir James Cantley, Dr. Watts Eden, Mr. P. L. Daniel, and many others. He wished that Dr. Kay Menzies could have been present to hear that Charing Cross, a voluntary hospital, was not only solvent but had a credit balance. Rumours were abroad that the London County Council would eventually absorb the London voluntary hospitals, and that these would become State controlled. This was not only an idle but a harmful rumour which injured the voluntary hospitals and interfered with their subscriptions. The London

County Council realised the achievement of the voluntary bodies in teaching students and had no wish to interfere with the voluntary system. Mr. Eric Crook, the Dean, said in his reply that Charing Cross was known as a "happy ship," and that the large attendance at the annual dinner in proportion to the size of the hospital was an indication of the affection with which the hospital and medical school were regarded by students, graduates, and staff. Since last year special courses in anatomy and applied physiology had been established, and had been well attended; the entries to the medical school were steadily increasing. The health of the chairman was proposed by Dr. S. Cochrane Shanks, who spoke of him not only as the outstanding dermatologist of his generation but as a formidable performer in the field of sport. During the evening Dr. S. Taylor Harris, accompanied by Miss Kathleen Markwell, sang delightfully a programme of songs well suited to the taste of his audience.

St. George's Hospital.

The annual dinner of St. George's Hospital Medical School was held at the Hyde Park Hotel on Oct. 1st. Mr. H. S. Pendlebury, formerly senior surgeon to the hospital, was in the chair, and more than 100 past and present members of the school enjoyed an excellent dinner. The toast of "The Hospital and Medical School" was proposed by Sir Humphry Rolleston, and his scholarly speech was responded to by Dr. A. Feiling, dean of the school, who said that the prospects for the coming year were brighter than ever. The toast of "The Chairman" was proposed by Dr. Llewellyn Powell, who, in a humorous and well-chosen speech, recalled the long and happy association of Mr. Pendlebury with St. George's Hospital. During the evening reference was made to the great loss that the school had sustained through the death of the late Mr. E. B. Turner.

Middlesex Hospital.

Mr. Herbert Charles, who took the chair at the annual dinner at the Savoy Hotel on Oct. 1st, said that the new west wing of the hospital was now complete, and it was hoped that part of the east wing and cross-piece would be ready early next year. When all was finished there would be 710 beds instead of 402. Sincere appreciation was due, he thought, to Mr. A. E. Webb-Johnson for his unceasing interest and untiring activity in the work of rebuilding. The hospital board had shown great pluck in undertaking so big a responsibility, but when they had raised the £210,000 required for completion they would have set up an outstanding landmark of the voluntary system. Colonel W. A. Gillett agreed that the success of the appeal was astonishing. Whatever might happen in their relations with the State, the great national health services must include the voluntary hospitals with their teaching tradition. Mr. Eric Pearce Gould, acting dean during Dr. Izod Bennett's illness, spoke regretfully of the retirement of Mr. Comyns Berkeley, Sir Arnold Lawson, Mr. Charles, and Dr. S. L. Baker. Mr. Berkeley had left so large a gap, he said, that two men had been needed to fill it, Mr. L. C. Rivett and Mr. Frederick Roques. During the year athletics at the hospital had shown promise rather than success, but among old Middlesex men Dr. F. H. Kelly had taken second place in the competition for the King's prize at Bisley. The entry of students this year was a record (excluding one or two years after the war). In conclusion he was glad to announce that a corps of Middlesex nurses was now available for private cases; applications for their aid should be addressed to the lady superintendent. Mr. A. J. B. Goldsmith, as senior Broderip scholar, spoke sadly but beautifully on some conspicuous grievances. "The life of the medical student is a very hard one," he said, "and it is little acts of kindness, gentlemen, like being allowed to use the nurses' swimming bath, that will be afterwards remembered with tears of kindness." Dr. G. E. Beaumont said he would have found it easier to propose the health of The Guests if he had been allowed to invite them; but then they would not have been so distinguished. His charming descriptions included Sir Walter Fletcher as "the guiding spirit of the M.R.C., which decides in which direction medicine shall next advance," and it fell to Sir Walter to reply. No hospital, he said, had so magnificent a record as Middlesex for persistent and successful research. Others had longer traditions or greater endowments, but in most directions Middlesex was now leading the way. He was in a Government department, but he was not so foolish as to think that research can be State-directed. It depended on the individual curiosity of the scientific man, and must always therefore be a voluntary occupation. Mr. Victor Bonney, proposing the chairman's health, recalled that he had once excelled in all sports requiring great physical strength, and had held the world's record for bicycling for 12 and 24 hours at a stretch. Twenty years ago he had joined the illustrious line of Middlesex anæsthetists. Now in a world of mechanisation anæsthesia had not escaped, but only the coarser features of the art could be replaced by the machine. "Give Charles a bottle of ether and a rag and he'll give you a perfect anæsthetic under all circumstances." He possessed that flair which was only clinical instinct under another name—the product of subconscious observation available at a moment's notice for every emergency. He was a prince among anæsthetists, and one of the best and kindest of men.

St. Mary's Hospital.

Sir William Willcox presided over the annual dinner at the Trocadero Restaurant on Oct. 2nd. Lieut.-Colonel H. E. Verey, chairman of the hospital board, said it was hoped that the new buildings of the medical school would be ready for occupation next August. The hospital's endowment fund had increased by £12,000 during the year, and reorganisation was in progress, especially in the out-patient department. The sum of £33,000 had been received towards the £120,000 needed for the first section of the nurses' home, which would accommodate 225. Before a start could be made £100,000 was required, and unfortunately it was only by providing this additional accommodation that the hospital could use the beds liberated by building the new medical school. The hospital ought to be a unit of 500 beds, but this number could not be reached till there was room for the nurses. Dr. C. M. Wilson, dean of the medical school, recalled that soon after he took office the responsible authorities said that St. Mary's had no future as an undergraduate school. The grants it then received amounted to £1900. Now the grants were £11,000, and nobody had any more doubts about the future. The school was getting more than its share of academic ability, while in athletics last year the hospital reached the final in rugby football—for the first time for 30 years—and the semi-final in cricket. The aim was to make an all-round school of picked men, all of whom were good at something. Its size depended on the size of the hospital. The old days of middle-sized and medium schools had gone, and progress only waited on the provision of more beds. The health of the chairman was proposed by Sir John Broadbent, who described how Sir William had modestly made his way, without initial advantages, to success in three spheres of medical life—toxicology, war service, and consulting practice. Outside these spheres he followed hounds, attended temperance breakfasts, and left himself plenty of time to help anyone in difficulties. In reply, Sir William said he had first spoken at the hospital dinner in 1895, when he attended as a bashful senior scholar. Later he had played so many parts in the school that in Flexner's "Medical Education" he was held up as an example of what should not be. However, he certainly had no regrets. "A teaching post at a teaching hospital," he said in conclusion, "for anyone that way inclined, is the most delightful life you can have."

St. Thomas's Hospital.

The old students' dinner of St. Thomas's men, at the May Fair Hotel on Oct. 2nd, was overshadowed by the absence of Sir George Makins, owing to the death of his wife. Mr. J. Herbert Fisher, from the chair, spoke of Prof. Parsons's newest discovery about the hospital's patron, and its final transfer of allegiance from the doubtful to the doubting saint. With admirable brevity he proposed "The Hospital and Medical School," a toast to which Sir Arthur Stanley, as treasurer, rejoined by telling his hearers much about Thomas à Becket, and a little about the great financial stringency (of which, he remarked, he would not have thought it on looking round). Last year, what with Lady Houston's gift of £100,000, had been a fortunate one for the hospital; although they must, of course, practise every possible economy, he thought the policy would be to go on paying everybody as much as they could afford. Prof. L. S. Dudgeon, replying as dean of the medical school, recited some academic records, spoke of the lack of maternity beds for the teaching of students, and of the prospect of coöperation with the Lambeth Hospital. He dwelt with satisfaction on the arrangement arrived at with Bart.'s and Guy's for a combined University scholarship and exhibition, a conjunction of good augury for medical education in London; and on the athletic prowess which had gained every open prize in boxing, sport, cross-country running, and cricket, and most of the rowing. Sir Percy Sargent proposed 'Our Guests," with a happy word for each (e.g., Mr. H. H. Row, director of examinations, R.C.S., "the donor of pink papers to pilled people"). They included Sir John Rose Bradford, Surgeon Vice-Admiral Bond, the Deans of Bart.'s and Guy's, Surg.-Captain A. D. Cowburn, the Westminster coroner, Dr. A. G. G. Thompson, and Mr. C. H. Fagge. After Mr. Girling Ball had replied in lively vein, the chairman presented Sir Cuthbert Wallace with a portrait of himself, painted by Mr. George Harcourt and exhibited at

the late Royal Academy. The year 1867, Mr. Fisher remarked, was remarkable for the death of Faraday, for the publication of Lister's first paper on antiseptic surgery, and for the birth of Wallace (and himself), and he went on to tell the story of Sir Cuthbert's life from the time he went out to South Africa with Anthony Bowlby in command of the Portland Hospital, over two long periods as dean of the medical school, to his post as consulting surgeon to the First Army in France, and finally, to his appointment as director of research at the reconstituted Mount Vernon Hospital. Sir Cuthbert replied with a happily worded acknowledgment of all that he owed to his school. The toast of "The Chairman" was proposed by Mr. T. A. M. Forde.

Westminster Hospital.

About 125 past and present students dined together at the Grosvenor House Hotel, Park-lane, on Oct. 1st, the largest gathering of the sort known to the present secretaries. Mr. E. Rock Carling, who presided, in proposing "The Hospital and School," which were to him one and indivisible, set out with honest pride what could be done on a third of an acre of land. Although hampered in every department by lack of space, it was pioneer work done at the Westminster, alongside that done at St. Bartholomew's, which had led to the appointment of a National Radium Commission, and the spread of treatment with radium over the whole country. Now two new departments had been started, a mental out-patient clinic under Dr. R. Worth, and one for incipient phthisis under Dr. W. E. Lloyd. The Westminster, he said, would always care for the poor and needy; but who are the needy? For those who could make some contribution to their treatment in hospital but could not possibly afford the luxury of accurate diagnosis outside, two wards had been opened, and he emphasised the liberty of the practitioner who sent them in to coöperate in their treatment. Mr. Carling ended by acknowledging the indebtedness of Westminster to other schools. Venerable trees, he remarked, do not bear the best fruit; and he enumerated the many good grafts on the present staff. Dr. Guy Coltart, replying as a senior (for he has a son who is house surgeon at another London school), related thrilling experiences of general practice, some in the form of cautionary tales. To take an example: a predecessor of his had prescribed tonic pills containing strychnine and phosphorus to a patient, with the injunction to stop them should the strychnine make him twitchy; 27 years later, having twitched not at all, the patient returned with advanced phossy-jaw due to the other ingredient. Mr. A. P. R. Lewis replied for present students, speaking mostly on athletic achievement. The small hospital, he remarked, encourages a catholic taste for sports. He also put in a word for increased support for the hospital journal, *Broadway*, revived in 1922. Mr. G. T. Mullally proposed "The Guests," and Sir Henry Hadow replied as chairman of the school committee and chief speaker at the opening of the school on the previous afternoon. He spoke of the nearness of the pursuits we follow. Between Hippocrates and Robert Bridges there had been many who followed both medicine and literature; he recalled especially two contemporaries of Queen Anne, John Arbuthnot and John Radcliffe, of whom the one created "John Bull" and the other made the immortal remark on a colleague with whom he was conducting a quarrel, that "he would take anything from him except physic." Mr. Arthur Evans boisterously proposed "The Chairman," and the formal part of the evening ended with fitting tribute to the hon. secretaries, Mr. C. Price Thomas and Dr. W. Ernest Lloyd.

National Hospital, Queen-square.

A post-graduate course has now begun at this hospital, consisting of out-patient clinics, at 2 P.M. each weekday, except Saturday; clinical lectures and demonstrations at 3.30 P.M. on Mondays, Tuesdays, Thursdays, and Fridays; lectures on the pathology of the nervous system, by Dr. J. G. Greenfield, at noon on Fridays; lectures on the anatomy and physiology of the nervous system, by Dr. MacDonald Critchley, at noon on Tuesdays and Thursdays; and clinical demonstrations on methods of examination, by Dr. E. A. Carmichael, at 5 P.M., on Tuesdays and Thursdays. Particulars may be had from the dean of the hospital, Queen-square, London, W.C. 1.

Post-graduate Work in Newcastle.

Classes will be held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on Thursday afternoons from 1.30–5.30 P.M. until Dec. 10th (except Oct. 15th and Nov. 19th). Application should be made to the registrar of the College of Medicine, Newcastle. There will also be a special course in midwifery and gynæcology on Wednesdays at 3 P.M. from Oct. 14th.

Royal College of Surgeons of England.

Demonstrations of museum specimens, for advanced students and medical practitioners, will be given in the theatre of the College at 5 P.M. on Mondays and Fridays from Oct. 23rd to Nov. 9th. The Friday demonstrations will be by Sir Arthur Keith, whose subjects will be: (1) Changes in the Jaws of English People in Recent Centuries, (2) the Anatomy of the Pyloric Sphincter in Cases of Hypertrophic Enlargement, and (3) the Pathology of Hydrocephaly. On Mondays, Oct. 26th and Nov. 2nd, Mr. C. P. G. Wakeley will deal with Primary and Secondary Tumours of Bone, and on Nov. 9th Mr. R. Davies-Colley will speak on the Border-line Bone Tumours.

University of London.

A reception was held at the University on Sept. 28th to celebrate the centenary meeting of the British Association. The honorary degree of Doctor of Science was conferred on General Jan Christiaan Smuts, F.R.S., president of the Association; Sir Frederick Gowland Hopkins, P.R.S., professor of biochemistry in the University of Cambridge; Sir Charles Scott Sherrington, O.M., Waynflete professor of physiology in the University of Oxford; Lord Rutherford of Nelson, O.M., Cavendish professor of experimental physics in the University of Cambridge; and (*in absentiâ*) Sir Joseph John Thomson, O.M., master of Trinity College, Cambridge.

University of London Graduates Association.—A communication from Lord Beauchamp, announcing his resignation as Chancellor of the University, was read at the meeting of the council of this Association on Oct. 2nd, and it was unanimously resolved to invite Lord Moynihan, of Leeds, President of the Royal College of Surgeons of England, to accept the Association's nomination for the office of Chancellor. It was further unanimously resolved, in view of the forthcoming general election, that the Association should again nominate Sir Ernest Graham-Little as their candidate for Parliament, and the council expressed its gratification that he had declared himself a supporter of the National Government.

University of Dublin.

At recent examinations in the School of Physic, Trinity College, the following candidates were successful:—

FINAL EXAMINATION FOR M.B., B.CH.

Part I. Therapeutics, Pathology, &c.—H. D. Clarke, E. A. Smyth, R. G. Taylor, James Bell, M. J. Horgan, J. K. Lavery, E. C. Rowlette, D. G. Walker, Ethel S. Wilson, Una M. Irvine, L. W. M'Caughey, W. A. Clarke, and T. J. M. Gregg.

University of Bristol.

The Long Fox lecture will be delivered by Dr. A. L. Flemming in the physiological lecture theatre of the University at 5 P.M. on Oct. 27th. His subject will be the Partnership between Anæsthesia and Surgery.

Royal Academy of Medicine in Ireland.

At the annual meeting of the Academy, held in Dublin on Oct. 1st, Prof. T. G. Moorhead was re-elected president; Dr. T. P. C. Kirkpatrick, secretary and treasurer; and Mr. William Doolin, secretary for foreign correspondence. The following were elected to the General Council: Dr. E. T. Freeman, Dr. G. FitzGibbon, Mr. C. J. MacAuley, Sir John Moore, Mr. R. A. Stoney, and Sir William Wheeler. The following were elected presidents of sections: Medicine, Prof. H. F. Moore; Surgery, Mr. R. A. Stoney; Pathology, Prof. J. T. Wigham; Midwifery and Gynæcology, Dr. G. Tierney; State Medicine, Dr. J. P. Shanley; Anatomy and Physiology, Dr. C. P. Martin; Laryngology and Otology, Sir R. H. Woods.

Socialist Medical Association.

This association, which was formed a year ago, has been granted affiliation to the Labour Party as a Socialist Society. It is also affiliated to the new International Socialist Medical Association. It includes in its programme a socialised medical service both preventive and curative, free and open to all. A subcommittee is engaged in drafting a scheme for the socialisation of the health services, and it is hoped that it will be complete by the end of this year. Further objects of the association are the dissemination of the principals of Socialism within the medical and allied services, and the stimulation of interest in health questions among the members of the Labour, Socialist, trade union, and coöperative movements. Membership and associateship is open to all members of the medical, dental, nursing, and other approved allied services and to students of the same services. Further particulars may be had from the secretary, Dr. C. W. Brook, 72, Balham Park-road, Balham, S.W. 12.

Dr. Geoffrey McKay Gibbon, of Forres, has been appointed surgeon to the *Discovery II.* for her Antarctic voyage.

Ross Award Fund.

It is announced that £15,410 has now been subscribed to the fund started two years ago as a testimonial to the work of Sir Ronald Ross, F.R.S.

Chelsea Clinical Society.

The annual dinner of this society will be held at the Hotel Rembrandt, Thurloe-place, S.W., on Tuesday, Oct. 20th, at 7.30 for 8 P.M. The guests are likely to include Lord Hanworth, Sir John Reith, and Mr. A. P. Herbert.

National Institute for the Deaf.

This institute is equipping a large house, 26, Highbury-quadrant, London, N., to provide for some 20 deaf boys and youths who need a healthy and happy home while going out to their daily work. The new hostel is almost ready for occupation. The address of the institute is 2, Bloomsbury-street, New Oxford-street, W.C.1.

Motor Accidents at Newcastle-on-Tyne.

Between Jan. 1st and August 31st the Victoria Infirmary at Newcastle dealt with 723 motor accident cases. They cost the hospital £1257, and the patients paid £80.

International Society of Medical Hydrology.

The annual meeting of this Society will take place at Amsterdam (American Hotel) from Oct. 31st to Nov. 2nd Discussions will be held on the Influence of Chill in the Causation of Disease (opened by Profs. Schade and van Loghem), and on Factors in Marine Treatment (Prof. Moll and Dr. Häberlin). Arrangements have been made for visits and demonstrations at various clinics and objects of interest in the city. A limited number of places are available for non-members. The Society's office is at 55, Wellington-road, London, N.W. 1.

Tavistock-square Clinic.

At this clinic, 51, Tavistock-square, London, W.C., a course of lectures on Functional Nervous Disorders, for medical practitioners and students, will be held from Nov. 2nd to 14th. The lectures will be given at 4.45, 5.45, and 8.15 P.M. each weekday except Saturday, when there will be demonstrations from 2.30 to 5 P.M. At 6 P.M. on Mondays, from Oct. 12th to Nov. 30th, at Friends House, Euston-road, N.W., Prof. Millais Culpin will lecture on "Nerves"—Ancient and Modern. Tickets for both courses may be had from the hon. lecture secretary at the clinic.

Life Assurance Medicine.

At the sixth International Medical Congress on Industrial Accidents and Diseases, held in Geneva in July, the council approved the request of representatives of 16 countries for the formation of a special section for life assurance medicine. The countries represented were Austria, Belgium, Czecho-Slovakia, Denmark, France, Germany, Great Britain, Holland, Hungary, Italy, Luxembourg, Norway, Poland, Spain, Sweden, and Switzerland. A sectional executive committee consisting of Dr. Hörnig (Berlin), Dr. Otto May (London), Dr. Goffin (Brussels), Dr. Coert (The Hague), Prof. Romanelli (Rome), Prof. Bergstrand (Stockholm), and Dr. Kaufmann (Zurich) was elected, with Dr. Hörnig as chairman and Dr. Kaufmann as hon. secretary.

Chartered Society of Massage and Medical Gymnastics.

The third annual dinner of the society was held on Oct. 2nd at the Connaught Rooms, when the chair was taken by Mr. R. C. Elmslie. Captain Ian Fraser, who proposed "The Society," spoke gratefully of the privileges offered to blind students during the war. In response the chairman said he considered mechano-therapeutics to be an essential part of medical training, and massage one of the most important of accessory treatments, which he would like to see extended in panel practice. Members of the society who felt they ought to be allowed to give treatment at their own discretion he would remind that when working under a doctor they were relieved of 90 per cent. of responsibility. Miss J. H. Wicksteed proposed "The Guests," giving a special welcome to Mrs. F. L. Dove, one of the founders of the society. In responding Mrs. Ivens-Knowles spoke of the beneficial effects of massage and exercises in obstetric and gynæcological cases, and Mr. Comyns Berkeley expressed his pleasure at coming into touch with the massage world again. Dr. James B. Mennell proposed "The Chairman," who, in replying, announced that Lord Moynihan had accepted the presidency of the society on the retirement of Sir Cooper Perry who, as second founder, had placed massage on its proper footing by securing the Charter.

London School of Hygiene and Tropical Medicine.

A course in tropical hygiene for men and women outside the medical profession proceeding to the tropics, will be given by Lieut.-Colonel G. E. F. Stammers at this School, Keppel-street, Gower-street, W.C., on certain days from Oct. 21st to 30th, at 5 P.M.

Diagnosis and Treatment of Venereal Diseases.

In our issue of Sept. 26th we announced that a course in this subject would shortly be given by the Salford Public Health Department. Owing to the illness of Lieut.-Colonel E. T. Burke, this course has been indefinitely postponed.

Guild of SS. Luke, Cosmas and Damian.

The twenty-first annual general meeting of this guild will be held in the Cathedral Hall, Archbishop's House, Westminster, on Sunday, Oct. 18th, after High Mass in the cathedral, which will be celebrated at 10.30 A.M. The guild has now 569 members. The hon. secretary is Dr. W. J. O'Donovan.

Glasgow Homœopathic Hospital.

The Houldsworth Homœopathic Hospital having become inadequate to the demands upon it, Glen Tower, a large private house in the west end of the city, has been acquired and reconstructed, and was opened last week by the Earl of Home. The old building will be used for dispensary services.

Hospital Direction Lights.

At St. Mary's Hospital, Paddington, a "guide light indicator" has been installed at the entrance for the guidance of patients and visitors. Different coloured lights point the way to the various departments, and also to the points where patients may pay contributions.

A Children's Ward.

The only open fire in the reconstructed Victoria Memorial Jewish Hospital, at Cheetham, Manchester, will be in the new Princess Elizabeth children's ward, which is to be as much like a nursery as possible. The china will be adorned with nursery rhymes and pictures of teddy bears; the coverlets, curtains, and nightgowns will be embroidered in orange and green, and a "cheerful fresco" will run round the walls.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 26TH, 1931.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 45 (last week 45); scarlet fever, 1659; diphtheria, 834; enteric fever, 55; pneumonia, 722; puerperal fever, 36; puerperal pyrexia, 120; cerebro-spinal fever, 17; acute poliomyelitis, 10; acute polio-encephalitis, 1; encephalitis lethargica, 10; continued fever, 1; dysentery, 12; ophthalmia neonatorum, 100. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Sept. 29th–30th was as follows: Small-pox, 63 under treatment, 4 under observation (last week 55 and 5 respectively); scarlet fever, 1313; diphtheria, 1377; enteric fever, 16; measles, 100; whooping-cough, 355; puerperal fever, 7 (plus 4 babies); encephalitis lethargica, 215; poliomyelitis, 8; "other diseases," 119. At St. Margaret's Hospital there were 15 babies (plus 11 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 5 (1) from measles, 5 (0) from scarlet fever, 20 (7) from whooping-cough, 19 (4) from diphtheria, 51 (13) from diarrhœa and enteritis under two years, and 28 (6) from influenza. The figures in parentheses are those for London itself.

The fatal cases of enteric fever outside London occurred at Burton-on-Trent and Newcastle-on-Tyne. Four deaths from whooping-cough were reported from Liverpool, 2 each from Manchester and Newcastle-on-Tyne. Liverpool reported 4 deaths from diphtheria, Hull 3, Wolverhampton 2. Diarrhœa was credited with 14 deaths at Liverpool, 5 at Birmingham, and 3 at Sunderland.

The number of stillbirths notified during the week was 252 (corresponding to a rate of 39 per 1000 births), including 34 in London.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Oct. 12th.—5 P.M., UNITED SERVICES. Lieut.-Colonel E. M. Cowell: The Complete Military Surgeon. Presidential Address. A cinematograph demonstration of a Red Cross Air Ambulance will follow.

TUESDAY.—5 P.M., THERAPEUTICS. Dr. E. P. Poulton: Obesity. Presidential Address. A discussion will follow.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Dr. J. D. Rolleston: 1. Striæ Atrophicæ on the Back, following Typhoid Fever. Dr. W. N. Goldsmith: 2. Case for Diagnosis. Diffuse Symmetrical Granuloma. Other Cases will be shown. 8 P.M., NEUROLOGY. (Cases at 7.45 P.M.) Clinical Meeting at the Hospital for Epilepsy and Paralysis, Maida Vale, W. 9.

FRIDAY.—7.30 P.M. for 8 P.M., PHYSICAL MEDICINE, RADIOLOGY. The first Meeting of these Sections will take the form of a dinner which will be held at the Dorchester Hotel, Park Lane, W. 8.15 P.M., OBSTETRICS AND GYNÆCOLOGY, MEDICINE, PSYCHIATRY. Special Discussion on Medical Indications for Premature Termination of Pregnancy. Openers: Mr. Beckwith Whitehouse and Mr. Eardley Holland (Obstetrics); Dr. L. S. T. Burrell, Dr. T. F. Cotton, and Dr. G. Graham (Medicine); Dr. G. W. B. James and Dr. H. Yellowlees (Psychiatry). Other speakers will take part.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Oct. 12th.—8 P.M., Annual General Meeting.—8.30 P.M., Mr. Herbert Tilley: The Laryngoscope in Medicine, some reflections and recollections. (Presidential Address.)

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Keppel-street, W.C.

THURSDAY, Oct. 15th.—8.15 P.M., Mr. W. H. Gray, M.Sc., and Dr. J. W. Trevan: Experiments on Antimony Compounds used in the Treatment of Bilharzia and Kala-azar.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, Oct. 13th.—9 P.M. (at the Great Western Royal Hotel, Paddington), Discussion on Vertigo, to be opened by Dr. Wilfred Harris, Mr. M. E. Vlasto, and Mr. F. A. Juler.

SOCIETY FOR THE STUDY OF INEBRIETY.

TUESDAY, Oct. 13th.—4 P.M. (Friends' House, Euston-road, N.W.), Viscount Brentford: How the Alcohol Question concerns the Duties of the Home Office. Fourteenth Norman Kerr Memorial Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.

MONDAY, Oct. 12th, to SATURDAY, Oct. 17th.—PRINCE OF WALES'S HOSPITAL, Tottenham, N. Post-graduate course in General Medicine and Surgery. Daily, 10.30 A.M. to 5.30 P.M., Demonstrations, Operations, Lectures.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Course in Dermatology every afternoon, Clinics at 2 P.M. and 6 P.M., and lectures on Tues. and Thurs. at 5 P.M.—NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street. All day course in Diseases of the Heart, Demonstrations, and Lectures.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Course in Gynæcology for two weeks, occupying most mornings and afternoons.—HOSPITAL FOR TROPICAL DISEASES, 25, Gordon-street, W.C. All day course in Tropical Medicine.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C. All day course in Diseases of the Ear, Nose, and Throat, continuing for another three weeks.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. M.R.C.P. evening lectures at 8.30 P.M. as follows: Mond., Dr. L. J. Witts, Gastric and Duodenal Ulcer. Wed., Dr. R. D. Lawrence: Diabetes. Free lecture at 4 P.M. by Mr. W. Sampson Handley on Cancer.—ST. MARK'S HOSPITAL, City-road. Post-graduate free demonstration by Mr. J. P. Lockhart-Mummery at 2.30 P.M. on Mon.—INFANTS HOSPITAL, Vincent-square. Free post-graduate demonstration, the Management of Difficult Cases of Feeding, by Dr. Eric Pritchard, on Fri. from 3.30 P.M. to 4.30 P.M.

UNIVERSITY COLLEGE, Gower-street, W.C.

MONDAY, Oct. 12th.—5 P.M., Dr. R. J. Lythgoe: Physiology of the Sense Organs.

TUESDAY.—5.30 P.M., Prof. Karl Bühler: Theory of Language and Psychology of Speech.

WEDNESDAY.—5.30 P.M., Mr. J. Needham: Speculation, Observation, and Experiment as illustrated by the History of Embryology.

FRIDAY.—Mr. L. E. Bayliss: Respiratory Functions of the Blood.

NATIONAL HOSPITAL, Queen-square, W.C.

MONDAY, Oct. 12th.—2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Purdon Martin: Acute Infections of the Central Nervous System. (2).

TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Adie: Oculomotor Palsies.

WEDNESDAY.—2 P.M., Dr. Martin: Out-patient Clinic.

THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Gordon Holmes: Disturbances of Vision due to Cerebral Lesions. (2).

FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Greenfield: The Hæmato-encephalic Barrier.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY, Oct. 12th.—10 A.M., Gynæcological Wards; Genito-urinary Operations; Skin Department. 11 A.M., Surgical Wards. 2 P.M., Surgical Wards; Medical, Surgical, Eye, and Gynæcological Out-patients.

TUESDAY.—9.30 A.M., Operations. 10 A.M., Medical Ward Demonstration; Dental Department. 11 A.M., Throat Operations. 11.30 A.M., Surgical Demonstration. 2 P.M., Operations; Medical, Surgical, and Throat Out-patients.

WEDNESDAY.—10 A.M., Medical Wards; Children's Medical Out-patients. 2 P.M., Medical, Surgical, and Eye Out-patients. 2.30 P.M., Gynæcological Operations. 4.45 P.M., Venereal Diseases Demonstration.

THURSDAY.—10 A.M., Neurological Department. 11.30 A.M., Fracture Demonstration. 2 P.M., Medical, Surgical, Eye, and Genito-urinary Out-patients. 2.30 P.M., Operations.

FRIDAY.—10 A.M., Medical Wards, Skin Department, Dental Department. 2 P.M., Medical, Surgical, and Throat Out-patients. 2.30 P.M., Operations.

SATURDAY.—9 A.M., Throat Operations. 10 A.M., Medical Wards, Surgical Out-patients; Children's Medical Out-patients.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.

WEDNESDAY, Oct. 14th.—4 P.M., Mr. D. H. Patey: Pathology and Diagnosis of Pre-carcinomatous and Early Conditions of Cancer of the Breast.

KING'S COLLEGE, Strand, W.C.

TUESDAY, Oct. 13th.—5 P.M., Mr. J. W. Pickering, D.Sc.: Blood Plasma and Platelets. (Second lecture.)

THURSDAY.—5 P.M., Mr. J. A. Hewitt, D.Sc.: Metabolism of the Carbohydrates and Fats.

LONDON SCHOOL OF ECONOMICS, Houghton-street, W.C.

WEDNESDAY, Oct. 14th.—5 P.M., Prof. R. Stenhouse Williams: Production, Distribution, and Value of Milk. (First of three lectures.)

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL, Gower-street, W.C.

TUESDAY, Oct. 13th.—5.15 P.M., Prof. J. G. Ledingham: Resistance to Infection, Natural and Induced. (Free Lectures in Pathology.)

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark Hill, S.E.

THURSDAY, Oct. 15th.—9 P.M., Mr. St. J. D. Buxton: Modern Methods of Treating Common Fractures.

ST. MARK'S HOSPITAL, City-road, E.C.

THURSDAY, Oct. 15th.—4.30 P.M., Dr. C. Dukes: Precancerous Lesions of the Alimentary Tract.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

WEDNESDAY, Oct. 14th.—4 P.M., Sir Ernest Graham-Little: Health of the London Citizen.

BRITISH INSTITUTE OF RADIOLOGY, 32, Welbeck-street, W.

THURSDAY, Oct. 15th.—8.30 P.M. Dr. G. Simon: Rationalisation of Diagnostic X Ray Exposures. Mr. B. W. Anderson: Use of X Rays in the Study of Pearls.

FRIDAY.—1 P.M. Visit to radiological department of Londno Hospital.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Oct. 13th.—5 P.M., Dr. W. Griffith: Principles of Treatment.

THURSDAY.—5 P.M., Dr. I. Muende: Pathology Demonstration.

LONDON HOSPITAL MEDICAL COLLEGE.

WEDNESDAY, Oct. 14th, to SATURDAY.—Postgraduate for former Students.

THURSDAY, Oct. 15th.—4.15 P.M., Prof. A. J. Hall: Chronic Epidemic Encephalitis. (Schorstein lecture.)

LONDON SCHOOL OF HYGIENE.

TUESDAY, Oct. 13th, and following Thursday and Friday.—5 P.M., Sir George Newman: Rise of Preventive Medicine. (Heath Clark lectures.)

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.

THURSDAY, Oct. 15th.—3 P.M., Dr. Russell Brain: Epilepsy.

TAVISTOCK-SQUARE CLINIC FOR FUNCTIONAL DISORDERS, 51, Tavistock square, W.C.

MONDAY, Oct. 12th.—6 P.M. (at the Friends' House, Euston-road, N.W.), Prof. Millais Culpin: The Meaning of *Nervous* (first of a series of eight lectures on Nerves—Ancient and Modern).

ANCOATS HOSPITAL, Manchester.

THURSDAY, Oct. 15th.—4.15 P.M., Dr. G. J. Langley: Hyperpiesia (Post-graduate Lecture).

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.

TUESDAY, Oct. 13th.—4.15 P.M., Dr. Crighton Bramwell: Treatment of Hyperthyroidism.

FRIDAY.—4.15 P.M., Dr. P. B. Mumford: Demonstration of Skin Cases.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, Elizabeth street, Manchester.

WEDNESDAY, Oct. 14th.—4.30 P.M., Mr. S. Kropman: The Relation of Dental Disease to Systemic Conditions.

Appointments

BROWN, D. L., M.B., Ch.B. Staff., has been appointed Superintendent of the Edmonton and Enfield Isolation Hospital.

HARPER, J. S., M.B., Ch.B. Aberd., Assistant M.O. of Schools, Essex County Council.

THOMAS, C. J., L.R.C.P. Lond., M.R.C.S., Deputy Superintendent of Whitlingham Mental Hospital.

City of London Maternity Hospital, City-road, E.C.: BARBER, A., L.R.C.P. Lond., M.R.C.S., Resident Medical Officer; and SKYRME, A. D., L.R.C.P. Lond., M.R.C.S., Assistant Resident Medical Officer.

Vacancies

For further information refer to the Advertisement columns.

Aylesbury, Royal Buckinghamshire Hospital.—Res. M.O. At rate of £200.

Bedford County Hospital.—H.S. and Asst. H.S. At rate of £175 and £130 respectively.

Birmingham, Little Bromwich Isolation Hospital, &c.—Med. Supt. £1000.

Bradford, Royal Eye and Ear Hospital.—Jun. H.S. £150.

Brentwood, Essex, High Wood Hospital for Children.—Asst. M.O. £350.

Bristol Eye Hospital.—Res. H.S. £150.

Bristol Royal Infirmary.—H.S. and H.P. Each £60.

Cheadle, Cheshire, Barnes Convalescent Hospital.—Res. M.O. £250.

Colchester, Essex County Hospital.—Asst. H.S. and Reg. £120.

Derbyshire County Council.—M.O. £600.

Ealing, King Edward Memorial Hospital.—Hon. Consulting Dermatologist.

Edgware, Redhill County Hospital.—Res. Asst. M.O. £400.

Evelina Hospital for Children, Southwark, S.E.—Cas. and Out-Patient O. At rate of £120.

Glasgow Corporation, P.H. Dept.—Jun. Asst. for Bacteriological Laboratory. £350.

Glasgow Eye Infirmary.—Res. H.S. and Res. Asst. H.S. £250 and £150 respectively.

Godalming, Surrey, King George V. Sanatorium.—Two H.P.'s. £80.

Great Yarmouth General Hospital.—H.S. £140.

Grove Park Hospital, Lee, S.E.—Asst. M.O. £350.

Hampstead General and N.W. London Hospital, Haverstock Hill, N.W.—H.S. At rate of £100.

Hospital for Consumption and Diseases of Chest, Brompton.—Asst. Res. M.O. £150. Also H.P. and Jun. H.P. Each £50 for six months.

Hospital for Sick Children, Great Ormond-street, W.C.—Med. Reg. £250.

Huddersfield, West Riding Mental Hospital, Storthes Hall, Kirkburton.—Asst. M.O. £400.

Kingston-upon-Hull, Anlaby-road Institution.—Two Asst. M.O.'s. Each £300.

Kingston-upon-Hull, City and County of.—Asst. M.O.H. £600.

Leamington Spa, Warneford General Hospital.—Res. H.S. and H.P. Each £165.

London Temperance Hospital, Hampstead-rd., N.W.—Res. M.O. and Cas. O. At rate of £175 and £120 respectively.

Lowestoft, St. Luke's Hospital.—Asst. M.O. £350.

Manchester Northern Hospital for Women and Children, Park Place, Cheetham Hill-road.—Sen. and Jun. H.S. £130 and £100 respectively.

Manchester Royal Eye Hospital.—Jun. H.S. £120.

Manchester Royal Infirmary, Roby-street.—H.S. At rate of £100–£200.

Manchester, St. Mary's Hospital.—Res. Obstet. O. for Whitworth-street West Hospital and Res. Surg. O. for Whitworth Park Hospital. Each £175. Also two H.S.'s for Whitworth-street West Hospital. Each at rate of £50.

Margate and District General Hospital.—Res. M.O. £150.

Newcastle-on-Tyne, Royal Victoria Infirmary.—Hon. Asst. to Skin Dept.

Norwich, Norfolk and Norwich Hospital.—Cas. O. and H.S. £120.

Prince of Wales's General Hospital, Tottenham, N.—Sen. and Jun. H.P.'s and H.S.'s. At rate of £120 and £90 respectively.

Queen's Hospital for Children, Hackney-road, E.—Surgeon to Ear, Nose, and Throat Department.

Reading, Royal Berkshire Hospital.—Cas. O. Radiological H.S. and Res. Anæsthetist and H.S. for Blagrave Branch Hospital. All at rate of £150.

Rochester, St. Bartholomew's Hospital.—H.S. At rate of £175.

Royal Eye Hospital, St. George's Circus, Southwark, S.E.—H.S. and Asst. H.S. At rate of £150 and £100 respectively.

Royal National Orthopædic Hospital, 234, Gt. Portland-street, W.—Four Surg. Regs. Each £105.

Royal Northern Hospital, Holloway, N.—H.P. At rate of £70.

Ryde, Royal Isle of Wight County Hospital.—Vacancy on the Hon. Med. Staff.

Samaritan Free Hospital, Marylebone-road, N.W.—H.S. At rate of £100.

Sheffield Royal Hospital.—Ophth. H.S. Also Anæsthetist. £120 and £80 respectively.

Sheffield Royal Infirmary.—H.S. and 2nd Asst. Cas. O. At rate of £80.

Southport General Infirmary.—Jun. H.S. £150.

Stockport County Borough.—M.O.H. £1100.

Stoke-on-Trent, North Staffordshire Royal Infirmary.—Asst. H.P. £125.

Sutton and Cheam New Hospital.—Res. M.O. At rate of £200.

Sutton, Surrey, Downs Hospital for Children.—Asst. M.O. £350.

West London Hospital, Hammersmith, W.—Hon. Asst. Surg. to Genito-Urinary Dept.

Western Ophthalmic Hospital, Marylebone-road, N.W.—Jun. Non.-Res. H.S. At rate of £100.

Winchester, Royal Hampshire County Hospital.—H.S. At rate of £100.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Barking (Essex).

Births, Marriages, and Deaths

BIRTHS.

MCFADDEN.—On Sept. 28th, at College-gardens, Belfast, the wife of George D. F. McFadden, F.R.C.S., of a son.

NELSON.—On Oct. 4th, at Urchfont, Orsett, Essex, the wife of Dr. F. A. M. Nelson, of a son.

MARRIAGES.

BROWN—FOSTER.—On Oct. 1st, at Holy Trinity, Lyonsdown, Alfred Brown, M.A., M.D., to Florence Louisa, daughter of the late Benjamin Foster, of Forest Hall, Northumberland.

DEATHS.

COBBOLD.—On Oct. 4th, following an operation, Charles Spencer Cobbold, M.D., of Camden-crescent, Bath, aged 78.

DAVIES.—On Sept. 29th, in London, Dr. Herbert Davies, M.B., B.S. Lond., D.P.H. Lond., M.O.H. for Breconshire.

ECCLES.—On Oct. 4th, at "Tregorland," near St. Mawes, Herbert Annesley Eccles, M.D. Lond., late of Upper Norwood, aged 62 years.

MORGAN.—On Sept. 30th, at Gwendolen-avenue, Putney, Colonel Frederick James Morgan, C.M.G., C.B.E., late R.A.M.C.

MURRAY.—On Oct. 4th, at Apsley, Greek-street, Stockport, Robert Alexander Murray, M.D., O.B.E., J.P., aged 73.

SMITH.—On Sept. 30th, Gerard Henry Smith, M.R.C.S., L.S.A., of Blackheath, Kilburn, and Hobart, Tasmania, in his 78th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages and Deaths.

PRESENTATIONS TO MEDICAL MEN.—Upon his retirement, after 23 years' service, from the position of medical superintendent of the Enfield and Edmonton joint isolation hospital board, Dr. R. Haldane Cook has been presented by the staff with a standard lamp and a screen.—After 41 years' practice in the Fletching district of Sussex, Dr. Harry Graveley, who has lately retired, has been presented with an illuminated address, a cheque for 200 guineas, and an album containing the names of no fewer than 940 subscribers, representative of all the parishes over a wide area. The presentation took place on the silver wedding day of Dr. and Mrs. Graveley.

MERSEYSIDE HOSPITALS COUNCIL.—The third annual report of this Council covers the year 1930. It shows that the penny-in-the-pound fund produced £15,614 more than in 1929, notwithstanding severe industrial depression, and that £101,000 was distributed to the voluntary hospitals. This sum sufficed, however, to pay only 70 per cent. of the actual cost of maintaining contributors and their dependants in the hospitals. At the end of 1930 there were 255,686 contributors, an increase of over 38,000, but there are still many wage-earners outside the scheme. The existence of the fund has encouraged the associated hospitals to undertake improvements and extensions which have cost £227,000 in the last three years, the result of which is that in 1930 their maintenance accounts were increased by nearly £37,000, as compared with 1927 when the contributory scheme was launched. The report, which is signed by Lord Cozens-Hardy, the chairman of the Council, records that in 1929 the hospitals spent for ordinary expenses and minor extensions £98,000 received from legacies and special gifts, and points out that "if the voluntary hospitals finances were in a really healthy condition it would not be necessary to use legacies for meeting current expenditure."